DVD Receiver

MX3550D/37S & MX3600D/37

MX3700D/37S & MX3800D/21H/22S

Service
Service
Service

Service Manual

For repair information on the Subwoofer please refer to Service Manual of Active Subwoofer SW3600 12NC: 3139 785 30069 and SW3700/SW3800 12NC: 3139 785 30068

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CLASS 1 LASER PRODUCT

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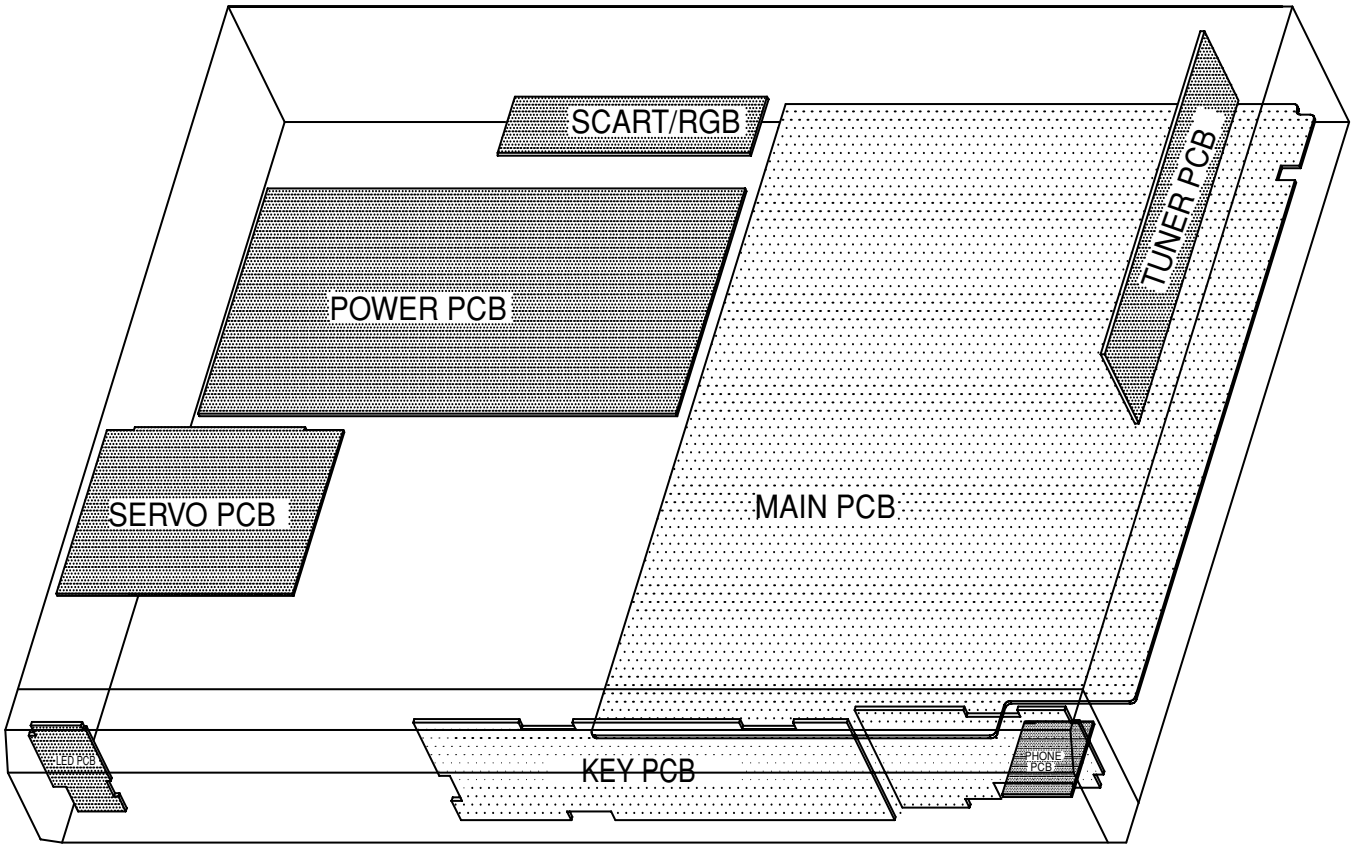
GB 3139 785 30067

Version 1.3

PHILIPS

LOCATION OF PC BOARDS



VERSION VARIATION:

Type /Versions: / Features & Board in used	MX3550D	MX3600D	MX3700D	MX3800D			
	/37S	/37	/37S	/21H	/22S	/33S	/35S
RDS function					x		
Progressive scan							
Scart board					x		
RGB board	x	x	x	x		x	x
Power PCB (110V~127V/120V)	x	x	x				
Power PCB (220V~240V)				x	x	x	x

Type /Versions: / Subwoofer	MX3550D	MX3600D	MX3700D	MX3800D			
	/37S	/37	/37S	/21H	/22S	/33S	/35S
SW3600/17S	x	x					
SW3700/17S			x				
SW3800/00S				x	x	x	x

SPECIFICATIONS

AMPLIFIER SECTION

Power Output
- Stereo mode (DIN).....2 x 50 W
- Surround mode (1 kHz).....50 W RMS/channel

Total Harmonic Distortion.....10 % at rated power (1 kHz)
Frequency Response .....180 Hz-14 kHz/±1 dB
Signal-to-Noise Ratio.....> 65dB(CCIR)
Input Sensitivity.....400 mV

DVD SECTION

Audio Performance :

Laser Type.....Semiconductor
Disc Diameter.....12cm/8cm
Video S/N ratio.....65 dB/A - WTD
Audio DAC.....24 Bits/96 kHz
Frequency Response.....4 Hz-20 kHz (44.1kHz)
..... 4 Hz-22 kHz (48 kHz)
..... 4 Hz-44 kHz (96 kHz)
Digital Output.....SPDIF Coaxial & Optical
Distortion.....0.5% (1kHz)

MP3 :

MP3 - CD bit rate.....32, 64, 96, 128, 192, 256(kbps)
MP3 - CD sampling frequencies.....32, 44.1, 48(KHz)
Recording format.....JPEG

VIDEO PERFORMANCES :

Video Decoding.....MPEG-2
Video DAC.....10 Bits
Signal System.....PAL/NTSC
Video Format.....4:3/16:9
Composite Video Output.....1.0Vp-p,75Ω
S-Video Output.....Y - 1.0Vp-p,75Ω
.....C - 0.286Vp-p,75Ω

IR REMOTE CONTROL

Effective Range.....> 8 Meter
Number of Keys.....45
Battery (1.5V).....AA x 2

SPEAKERS

Front Speakers / Surround speaker

System.....2-way shielded
Impedance/ ohm.....8Ω
Speaker drivers.....3" full range, 1" piezo
Dimensions (w x h x d)..... 96 mm x 155 mm x 95 mm
Weight.....0.45 Kg/each

Center Speaker

System.....2-way shielded
Impedance/ ohm.....8Ω
Speaker drivers.....3" full range, 1 piezo
Dimensions (w x h x d).....250 mm x 94 mm x 80 mm
Weight.....0.92 Kg/each

For /37 and /37S only

TUNER SECTION

Tuning Range..... FM 87.5 -108 MHz (100 kHz steps)
.....AM 530 - 1700 kHz (10 kHz steps)
26 dB Quieting Sensitivity.....FM 20 dB
26 dB Quieting Sensitivity.....AM 5000 uV/m
Image Rejection Ratio.....FM 25 dB
.....AM 28 dB
IF Rejection Ratio.....FM 60 dB
.....AM 24 dB
Signal-to-Noise Ratio.....FM 55 dB
.....AM 35 dB
AM Suppression Ratio.....FM 30 dB
Harmonic Distortion.....FM Mono 3%
.....FM Stereo 3%
.....AM 5%
Frequency Response.....FM 180 Hz-10kHz/±6 dB
Stereo Separation.....FM 26 dB(1 kHz)
Stereo threshold.....FM 23.5 dB

MISCELLANEOUS / GENERAL SECTION

Power Supply Rating.....120V/60 Hz
Power Consumption..... 250 W
Dimensions (w x h x d)..... 435 mm x 81 mm x 360mm
Weight.....5.1 kg

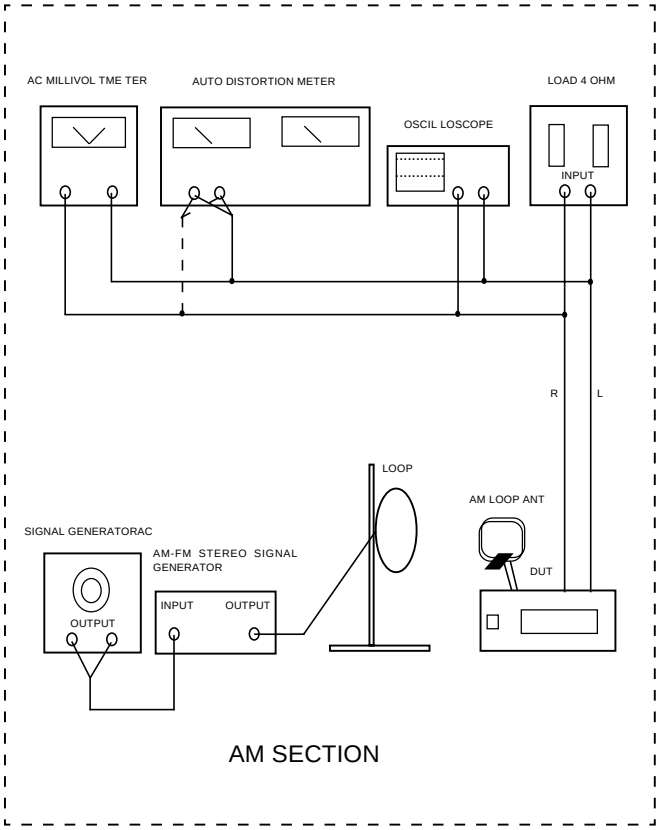
For /21H, /22S, /33S, /35S only

TUNER SECTION

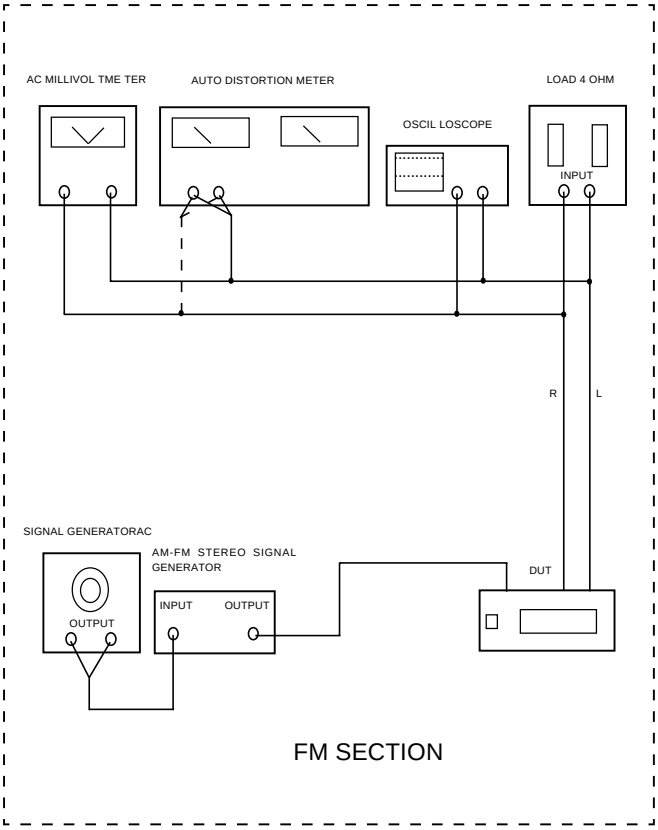
Tuning Range..... FM 87.5 -108 MHz (50 kHz steps)
.....MW531 - 1602 kHz (9 kHz steps)
26 dB Quieting Sensitivity.....FM 20 dB
26 dB Quieting Sensitivity.....MW 5000 uV/m
Image Rejection Ratio.....FM 25 dB
.....MW 28 dB
IF Rejection Ratio.....FM 60 dB
.....MW 24 dB
Signal-to-Noise Ratio.....FM 55 dB
.....MW 35 dB
AM Suppression Ratio.....FM 30 dB
Harmonic Distortion.....FM Mono 3%
.....FM Stereo 3%
.....MW 5%
Frequency Response.....FM 180 Hz-10kHz/±6 dB
Stereo Separation.....FM 26 dB(1 kHz)
Stereo threshold.....FM 23.5 dB

MISCELLANEOUS / GENERAL SECTION

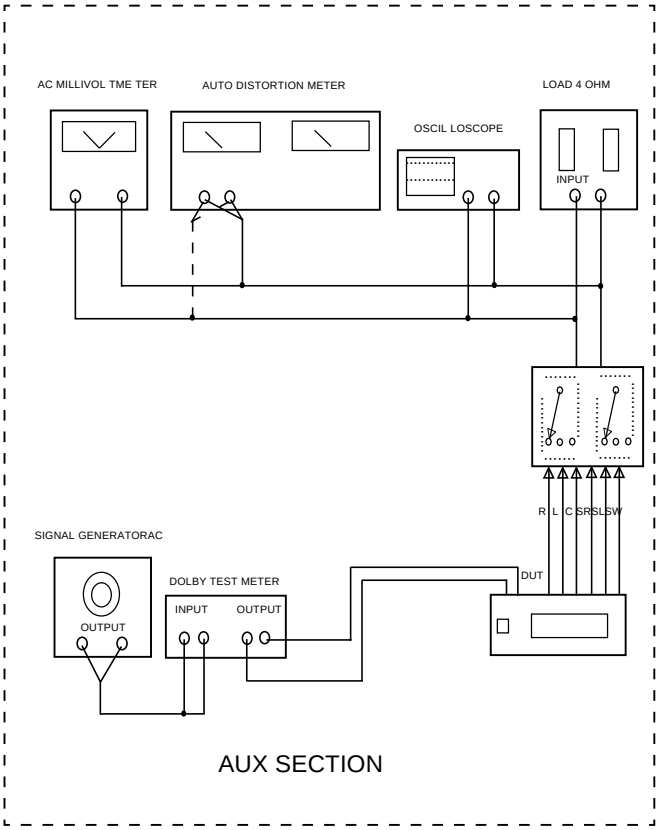
Power Supply Rating.....220 - 240V/50 Hz
Power Consumption..... 160 W
Dimensions (w x h x d)..... 435 mm x 81 mm x 360mm
Weight.....7.1 kg



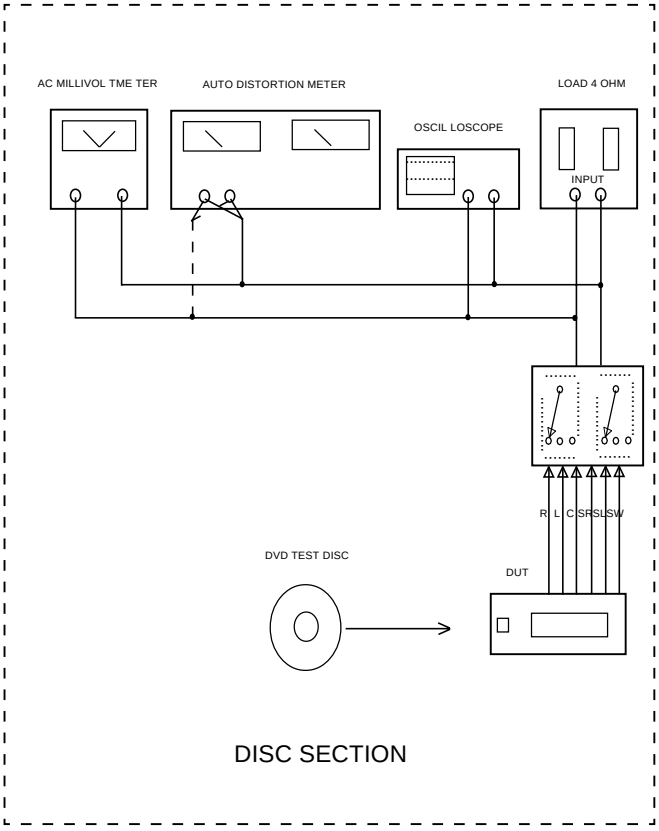
AM SECTION



FM SECTION



AUX SECTION



DISC SECTION

SERVICE AIDS

Service Tools:

Universal Torx driver holder 4822 395 91019
Torx bit T10 150mm 4822 395 50456
Torx driver set T6-T20 .....4822 395 50145
Torx driver T10 extended 4822 395 50423

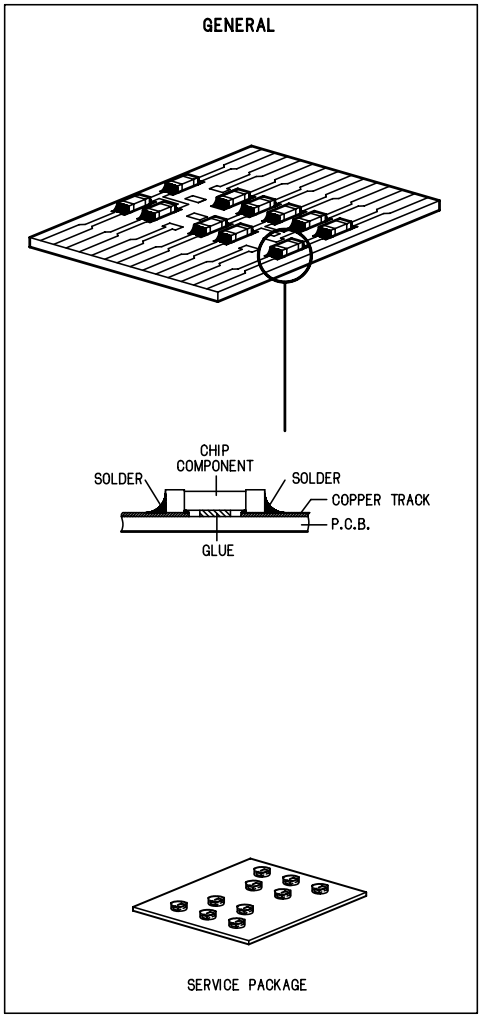
Compact Disc:

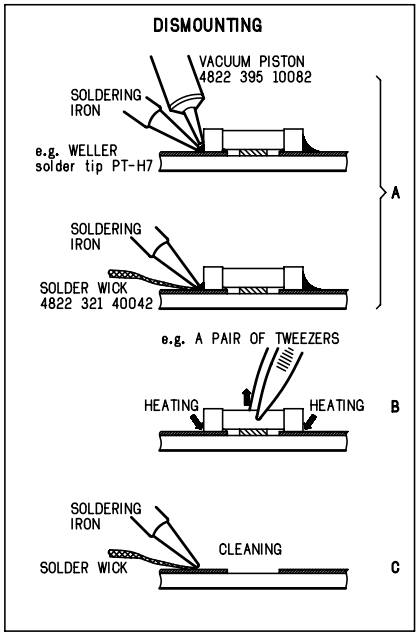
SBC426/426A Test disc 5 + 5A 4822 397 30096
SBC442 Audio Burn-in test disc 1kHz 4822 397 30155
SBC429 Audio Signals disc 4822 397 30184
Dolby Pro-logic Test Disc 4822 395 10216

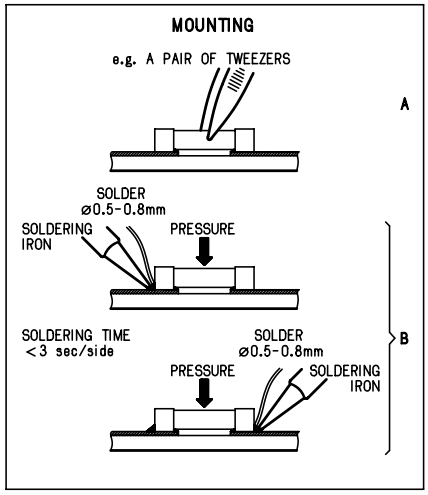
ESD Equipment:

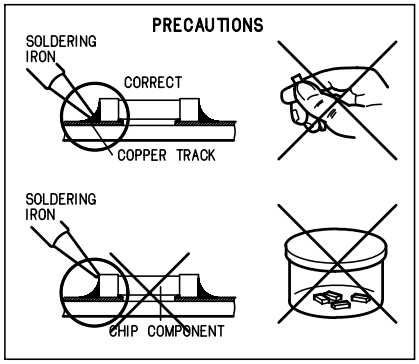
Anti-static table mat - large 1200x650x1.25mm ...4822 466 10953
anti-static table mat - small 600x650x1.25mm 4822 466 10958
Anti-static wristband 4822 395 10223
Connectorbox (1MΩ) 4822 395 11307
Extension cable
(to connect wristband to conn.box) 4822 320 11305
Connecting cable
(to connect table mat to conn.box) 4822 320 11306
Earth cable (to Connect product to mat or box) --4822 320 11308
Complete kit ESD3
(combining all above products) 4822 320 10671
Wristband tester 4822 344 13999

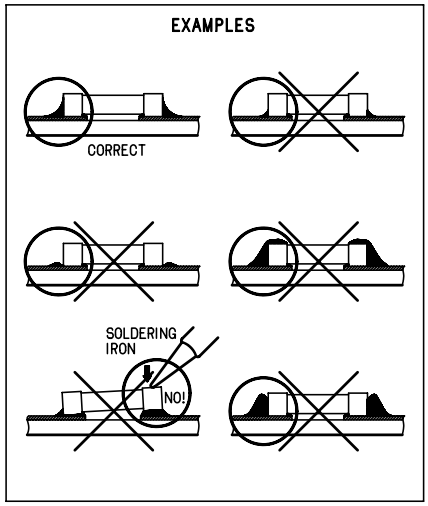
HANDLING CHIP COMPONENTS











ESD

GB WARNING

All ICs and many other semi-conductors are susceptible to electrostatic discharges (ESD). Careless handling during repair can reduce life drastically.
When repairing, make sure that you are connected with the same potential as the mass of the set via a wrist wrap with resistance. Keep components and tools also at this potential.

F ATTENTION

Tous les IC et beaucoup d'autres semi-conducteurs sont sensibles aux décharges statiques (ESD).
Leur longévité pourrait être considérablement écourtée par le fait qu'aucune précaution n'est prise à leur manipulation.
Lors de réparations, s'assurer de bien être relié au même potentiel que la masse de l'appareil et enfiler le bracelet serti d'une résistance de sécurité.
Veiller à ce que les composants ainsi que les outils que l'on utilise soient également à ce potentiel.

D WARNUNG

Alle ICs und viele andere Halbleiter sind empfindlich gegenüber elektrostatischen Entladungen (ESD).
Unsorgfältige Behandlung im Reparaturfall kan die Lebensdauer drastisch reduzieren.
Veranlassen Sie, dass Sie im Reparaturfall über ein Pulsarmband mit Widerstand verbunden sind mit dem gleichen Potential wie die Masse des Gerätes.
Bauteile und Hilfsmittel auch auf dieses gleiche Potential halten.

NL WAARSCHUWING

Alle IC's en vele andere halfgeleiders zijn gevoelig voor electrostatische ontladingen (ESD).
Onzorgvuldig behandelen tijdens reparatie kan de levensduur drastisch doen verminderen.
Zorg ervoor dat u tijdens reparatie via een polsband met weerstand verbonden bent met hetzelfde potentiaal als de massa van het apparaat.
Houd componenten en hulpmiddelen ook op ditzelfde potentiaal.

I AVVERTIMENTO

Tutti IC e parecchi semi-conduttori sono sensibili alle scariche statiche (ESD).
La loro longevità potrebbe essere fortemente ridatta in caso di non osservazione della più grande cauzione alla loro manipolazione.
Durante le riparazioni occorre quindi essere collegato allo stesso potenziale che quello della massa dell'apparecchio tramite un braccialetto a resistenza.
Assicurarsi che i componenti e anche gli utensili con quali si lavora siano anche a questo potenziale.

GB

Safety regulations require that the set be restored to its original condition and that parts which are identical with those specified, be used.

NL

Veiligheidsbepalingen vereisen, dat het apparaat bij reparatie in zijn oorspronkelijke toestand wordt teruggebracht en dat onderdelen, identiek aan de gespecificeerde, worden toegepast.

F

Les normes de sécurité exigent que l'appareil soit remis à l'état d'origine et que soient utiliséés les piéces de rechange identiques à celles spécifiées.

D

Bei jeder Reparatur sind die geltenden Sicherheitsvorschriften zu beachten. Der Original zustand des Geräts darf nicht verändert werden; für Reparaturen sind Original-Ersatzteile zu verwenden.

I

Le norme di sicurezza esigono che l'apparecchio venga rimesso nelle condizioni originali e che siano utilizzati i pezzi di ricambio identici a quelli specificati.

"After servicing and before returning set to customer perform a leakage current measurement test from all exposed metal parts to earth ground to assure no shock hazard exist. The leakage current must not exceed 0.5mA."

"Pour votre sécurité, ces documents doivent être utilisés par des spécialistes agréés, seuls habilités à réparer votre appareil en panne".

GB Warning !

Invisible laser radiation when open.
Avoid direct exposure to beam.

S Varning !

Osynlig laserstrålning när apparaten är öppnad och spärren är urkopplad. Betrakta ej strålen.

SF Varoitus !

Avatussa laitteessa ja suojalukituksen ohitettaessa olet alttiina näkymättömälle laserisäteilylle. Älä katso säteeseen!

DK Advarse !

Usynlig laserstråling ved åbning når sikkerhedsafbrydere er ude af funktion. Undgå udsaettelse for stråling.

System, Region code, Tuner, etc. setting procedure

1) System Reset

a) Press "SYSTEM" button on R/C. TV show "SETUP"
b) Select the menu using the "▼" and "►" button on R/C
c) Go feature setup page to do system reset

2) Region Code Change

After replacement / repair of the MPEG board, the customer setting and the region code may lost. Changing the Region code will put the player back in the state which it has left the factory.

Region Code

1	USA
2	EU
3	AP, Korea
4	Australia, NZ, Latam
5	RUSSIA, INDIA
6	CHINA

TV System

1	NTSC
2	PAL
3	AUTO

Menu/ Audio Subtitle (AS) Language

1	English
2	English
3	English
4	English

AFS

001	LX3000D/LX3500D
002	MX3550D/MX3600D/MX3700D/ MX3800D

oem derivative

08

- region code = 1 digit
- tv system = 1 digit
- "as/menu lang" = 1 digit
- "AFS" = "architechture Feature Set" = 3 digits

This field is used to define the architecture / features sets for each product.

- "oem derivative" = 2 digit

This field is use to define the OEM set. This will affect the background display.

Hence in total, reprograming will be done by way of the remote control. It should run as below :-

a) Put the player in stop mode. No disc loaded.
b) Press the following key on remote control:

For MX3550D/37S (USA)
<PLAY> <159> <111> <002> <08> <PLAY>

For MX3600D/37 (USA)
<PLAY> <159> <111> <002> <08> <PLAY>

For MX3700D/37S (USA)
<PLAY> <159> <111> <002> <08> <PLAY>

For MX3800D/21H (AP)
<PLAY> <159> <331> <002> <08> <PLAY>

For MX3800D/22S (Europe)
<PLAY> <159> <221> <002> <08> <PLAY>

For MX3800D/33S (Korea)
<PLAY> <159> <311> <002> <08> <PLAY>

For MX3800D/35S (China)
<PLAY> <159> <631> <002> <08> <PLAY>

* After the Region Code is changed it is necessary to reset the system so that the new Region Code will be fully effective. All customer setting will be lost.

* On top of the maximum number of times allowed for changing the region code is changed to 25.

* When the counter reach 25, you will not be able to further change the code until you reset the timer by the Region Code timer reset procedure

CAUTION !

This information is confidencial and may not be distributed. Only a qualified service person should reprogram the Region Code.

2-1

3) Region code change timer reset

Press below key to reset the timer :
a) In DISC source, stop mode and no disc in tray.
b) Press R/C "Play -159-PLAY" to reset timer to 25

4) Tuner area change

a) Press the "OPEN/CLOSE" button to openthe set's door
b) Press "1" "5" "9" button by using R/C.
c) TV Show "TUNER AREA ADJUST"
d) Select the tuner area you want by using the "▼" and "►" button on R/C, then press "OK" to confirm. TV show " TUNER AREA CHANGED"
If you didn't press it in five seconds, the system will remain original status.

AREA	BAND	FREQUENCY (Hz)		STEP(Hz)
USA	FM	87.5M	108M	100K
	AM	530K	1700K	10K
APAC	FM	87.5M	108M	50K
	AM	531K	1602K	9K
EUROPE	FM	87.5M	108M	50K
	AM	531K	1602K	9K
LATAM	FM	87.5M	108M	50K
	AM	530K	1710K	10K
AUSTRALIA / NZ	FM	87.5M	108M	50K
	AM	531K	1602K	9K

Note :-
(a) Please refer to the above different tuner area.

5. Video Out Change

a) Press "SYSTEM" on R/C button
b) Select the menu using the "▼" and "►" button on R/C
c) Go picture setup page select Video out item.

6. Password Change

a) Press "SYSTEM" on R/C button
b) Select the menu using the "▼" and "►" button on R/C
c) Go feature setup page select "PASSWORD". TV show "ENTER CODE". Press 4 times of "STOP" button on R/C.
d) Select "PARENTAL" "8 ADULT" on TV.
e) Enter PASSWORD to "1234"
* "1234" is a default password supplied.

6. Check software version

a) Open the CD door.
b) Press "123" and "OK" on the remote control.
c) TV will show the version on screen.

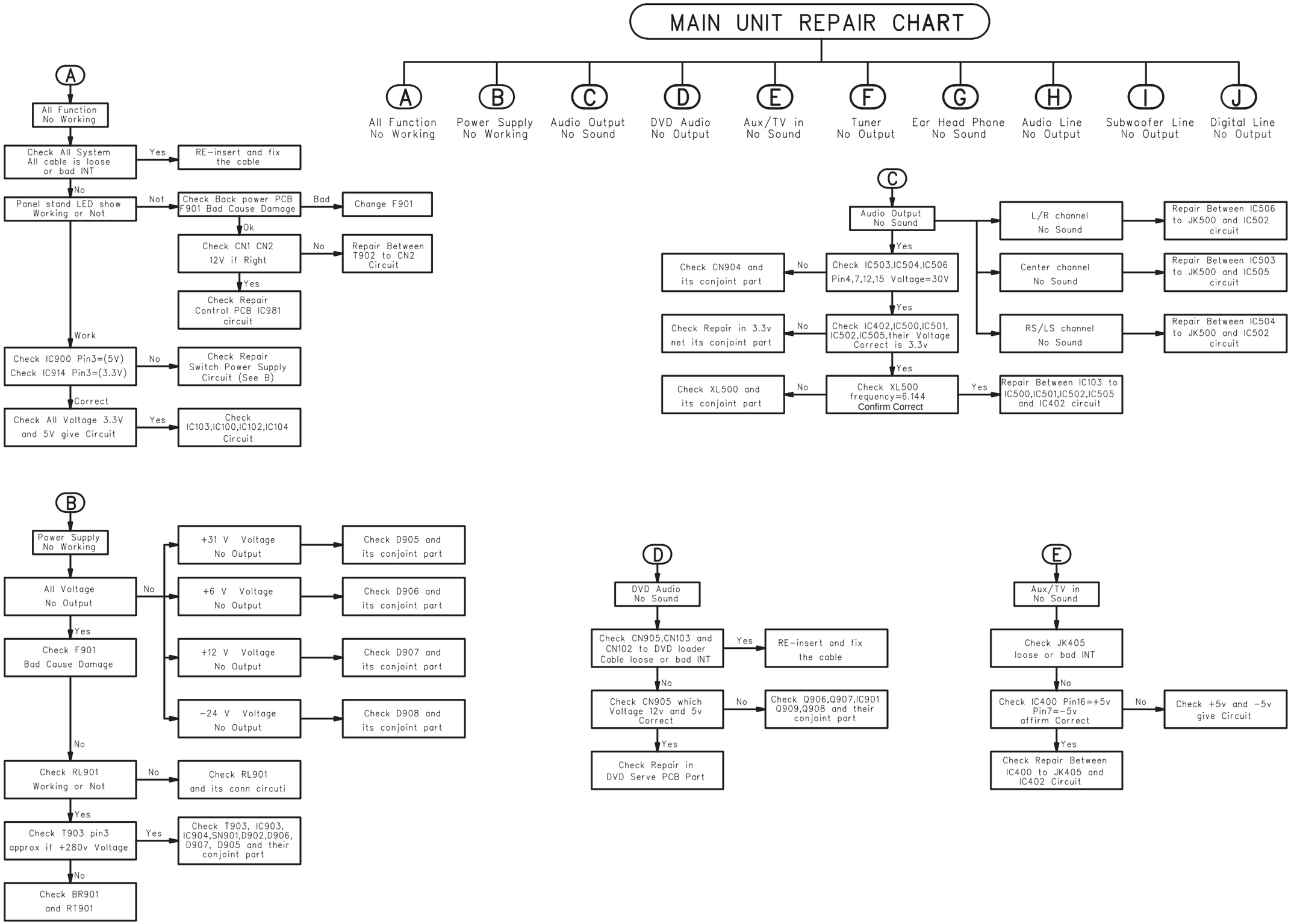
7. Upgrading new software

a) Open the CD-door, then insert the CD-R program disc.
b) Close the CD-door.
c) TV will show:-
- "disc loading"
- "bank30.rom"
- "writing" about 6 seconds.
- "Done"

* The latest upgraded is in version VER0410.

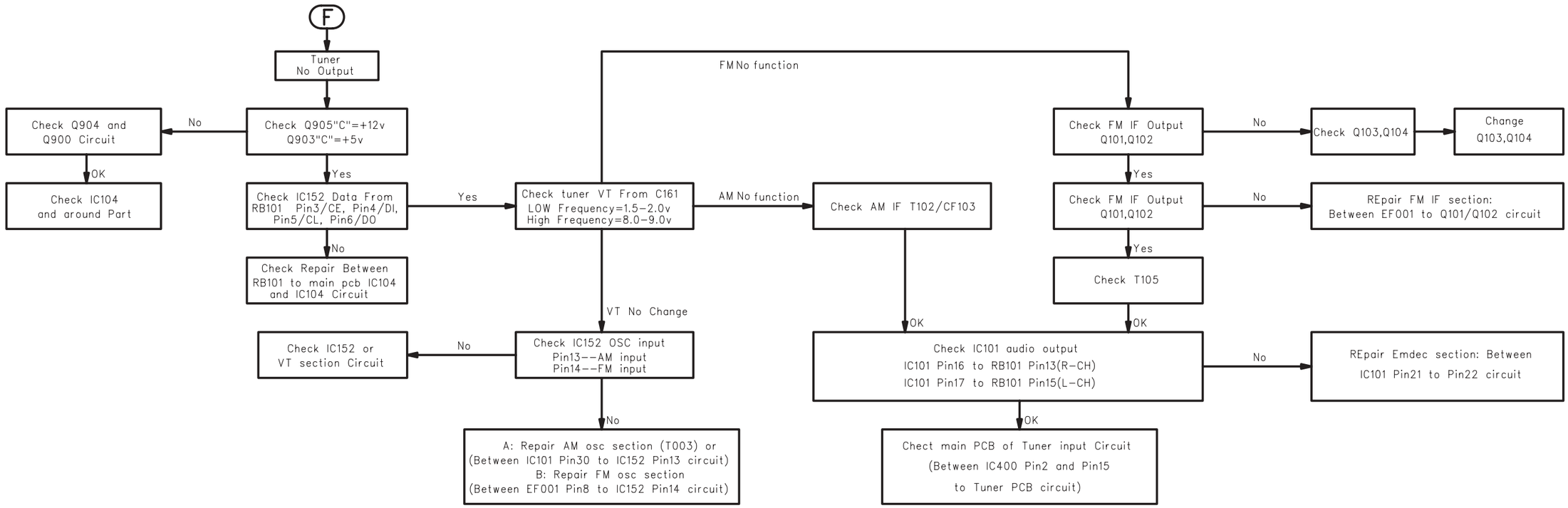
2-2

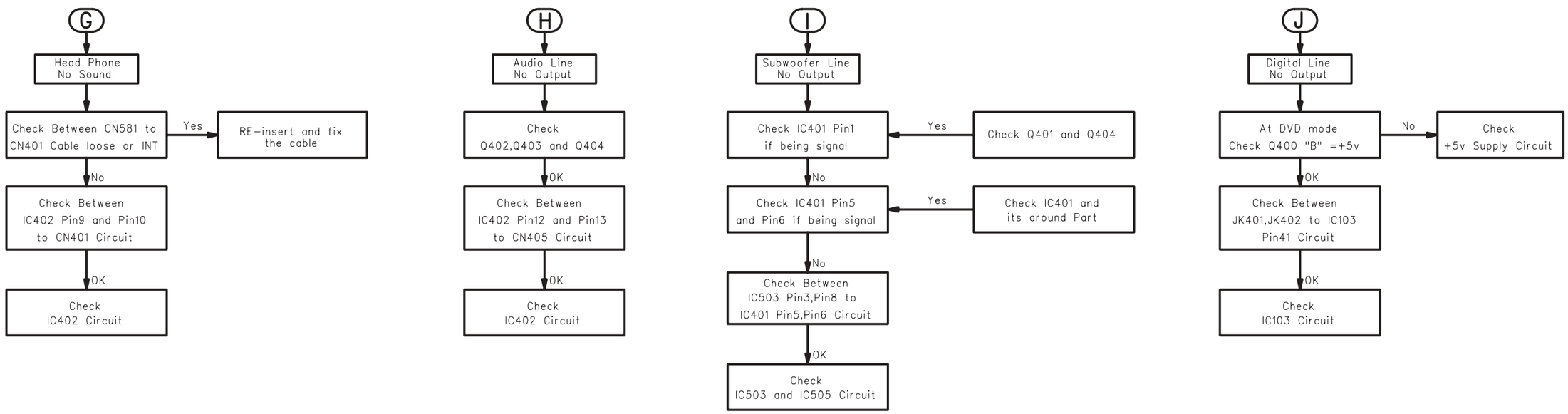
REPAIR INSTRUCTION


MAIN UNIT REPAIR CHART
A All Function No Working
B Power Supply No Working
C Audio Output No Sound
D DVD Audio No Output
E Aux/TV in No Sound
F Tuner No Output
G Ear Head Phone No Sound
H Audio Line No Output
I Subwoofer Line No Output
J Digital Line No Output
A
All Function No Working
Check All System All cable is loose or bad INT
Yes
RE-insert and fix the cable
No
Panel stand LED show Working or Not
Not
Check Back power PCB F901 Bad Cause Damage
Bad
Change F901
Ok
Check CN1 CN2 12V if Right
No
Repair Between T902 to CN2 Circuit
Yes
Check Repair Control PCB IC981 circuit
Work
Check IC900 Pin3=(5V) Check IC914 Pin3=(3.3V)
No
Check Repair Switch Power Supply Circuit (See B)
Correct
Check All Voltage 3.3V and 5V give Circuit
Yes
Check IC103,IC100,IC102,IC104 Circuit
B
Power Supply No Working
All Voltage No Output
No
+31 V Voltage No Output
Check D905 and its conjoint part
+6 V Voltage No Output
Check D906 and its conjoint part
+12 V Voltage No Output
Check D907 and its conjoint part
-24 V Voltage No Output
Check D908 and its conjoint part
Yes
Check F901 Bad Cause Damage
No
Check RL901 Working or Not
No
Check RL901 and its conn circuti
Yes
Check T903 pin3 approx if +280v Voltage
Yes
Check T903, IC903, IC904,SN901,D902,D906, D907, D905 and their conjoint part
No
Check BR901 and RT901
C
Audio Output No Sound
L/R channel No Sound
Repair Between IC506 to JK500 and IC502 circuit
Center channel No Sound
Repair Between IC503 to JK500 and IC505 circuit
RS/LS channel No Sound
Repair Between IC504 to JK500 and IC502 circuit
Yes
Check IC503,IC504,IC506 Pin4,7,12,15 Voltage=30V
No
Check CN904 and its conjoint part
Yes
Check IC402,IC500,IC501, IC502,IC505,their Voltage Correct is 3.3v
No
Check Repair in 3.3v net its conjoint part
Yes
Check XL500 frequency=6.144 Confirm Correct
Yes
Repair Between IC103 to IC500,IC501,IC502,IC505 and IC402 circuit
No
Check XL500 and its conjoint part
D
DVD Audio No Sound
Check CN905,CN103 and CN102 to DVD loader Cable loose or bad INT
Yes
RE-insert and fix the cable
No
Check CN905 which Voltage 12v and 5v Correct
No
Check Q906,Q907,IC901 Q909,Q908 and their conjoint part
Yes
Check Repair in DVD Serve PCB Part
E
Aux/TV in No Sound
Check JK405 loose or bad INT
No
Check IC400 Pin16=+5v Pin7=-5v affirm Correct
No
Check +5v and -5v give Circuit
Yes
Check Repair Between IC400 to JK405 and IC402 Circuit

2-3

REPAIR INSTRUCTION





DISASSEMBLY INSTRUCTIONS

Dismantling of the Front Panel Assembly

1) Open the DVD Tray by using the Open/Close Button while the Set is ON and disconnect the mains supply after removing the Tray Cover.

   Note: If this is not possible, the DVD Tray has to be open manually.

   Take a mini screw driver about 2mm diameter and make a marking 24mm from the tip as shown in figure 2. place the set on its side, insert the mini screw driver till the marking and slide it towards the right as shown in figure 1 until the Tray moves out of the Front Panel.

2) Return the set to its upright position and remove the Tray Cover as shown in Figure 3 and close the tray manually by pushing it back in.

3) Loosen 9 screws and remove the Top Cover by lifting the rear portion upwards before sliding it out towards the rear.
   - 5 screws on the back
   - 2 screws each on the left & right side

4) Loosen 7 screws & lift up the top edge of Front Panel assembly to free some catches before sliding it out towards the front.
   - 4 screws on the bottom
   - 1 screw "C" on the inside as indicated in Figure 5.
   - 1 screw each on the left & right side

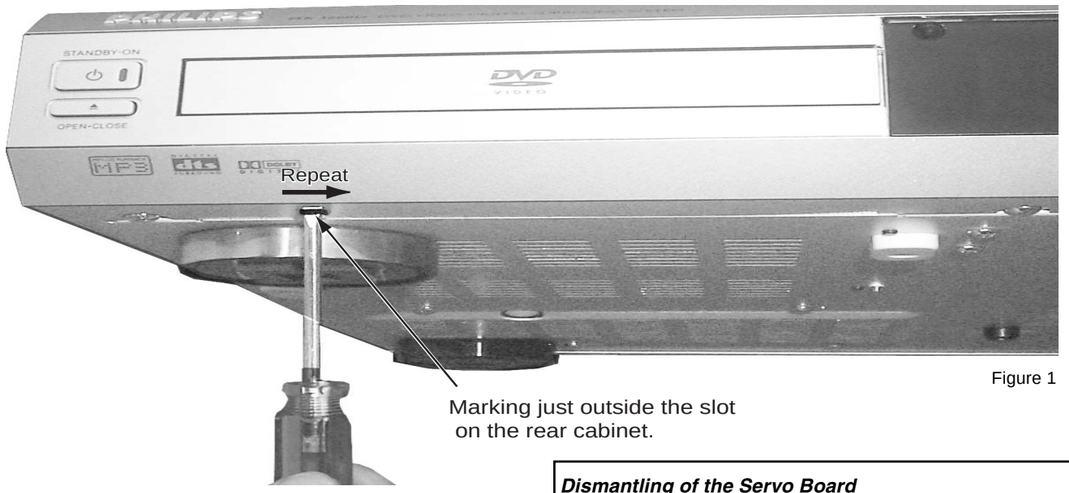


Figure 1

Figure 2

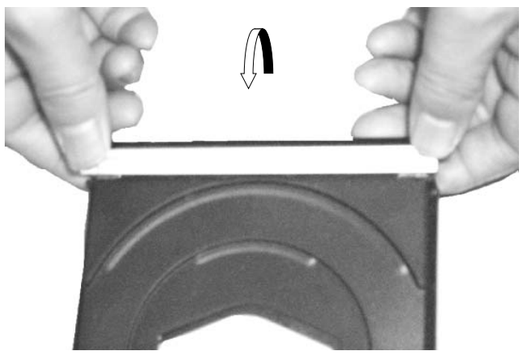
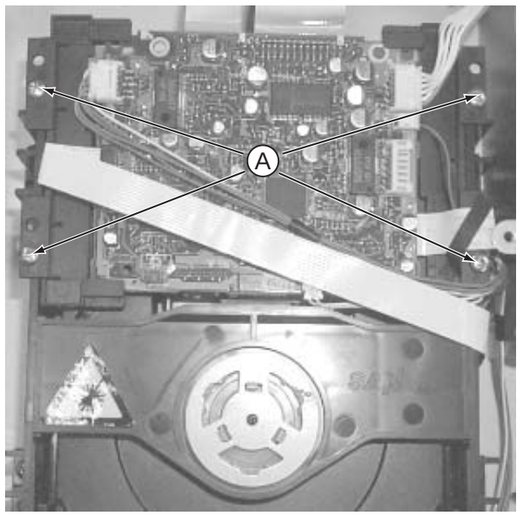


Figure 3

Dismantling of the Servo Board

1) Loosen 4 screws "A" to remove the Servo Board from the DVD Module as shown in figure 4



Note: Do not lost the limited parts of the Servo board

Figure 4

Dismantling of the Main Board

1) Loosen 5 screws "B" on the top of main board as shown in figure5.

2) Loosen 9 screws "D" at the back panel as shown in figure 6.

3) Remove all connectors on the RGBScart and main board.

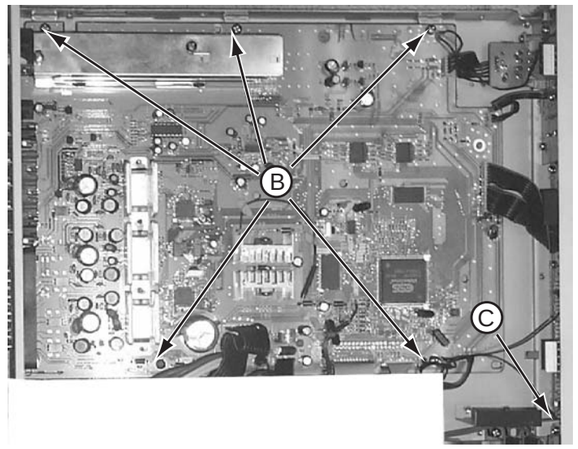


Figure 5

RGB Jack use for MX3600/37 ;
MX3700/37S

Scart Jack use for MX3800/22S only

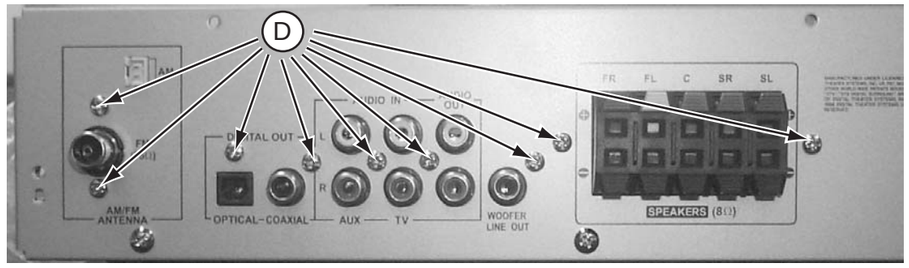


Figure 6

Dismantling of the Tuner Board

1) Loosen 4 screws "E" on the bottom cover as shown in figure 7.

3) Loosen 4 screws "F" at the top of the Power Board as shown in figure 8

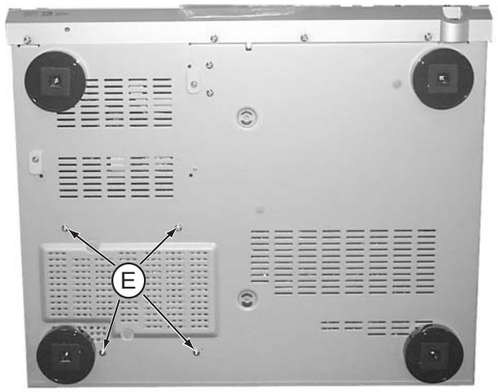


Figure 7

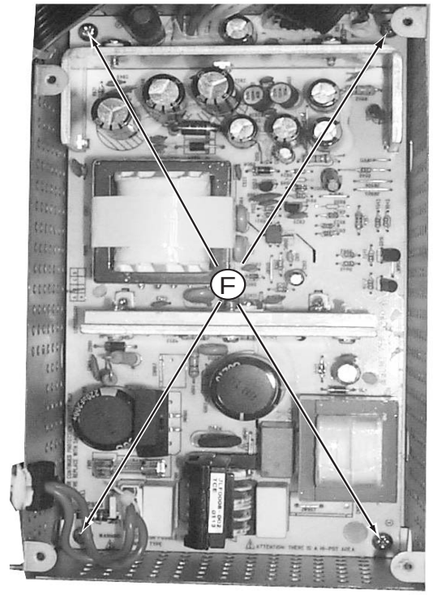


Figure 8

Dismantling of the Tuner PCB

1) Loosen 1 screw "G" and 3 solder points "H" to remove the sheild cover.

2) With the Main Board already dismantle, remove the Tuner board / sheild bracket assembly by unsolder the wire connector and 6 points "H".

3) Separate the Tuner board by unsoldering 4 points "J".

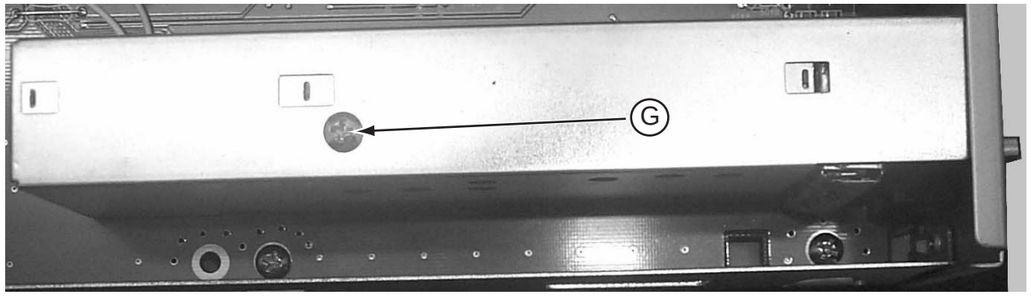


Figure 9

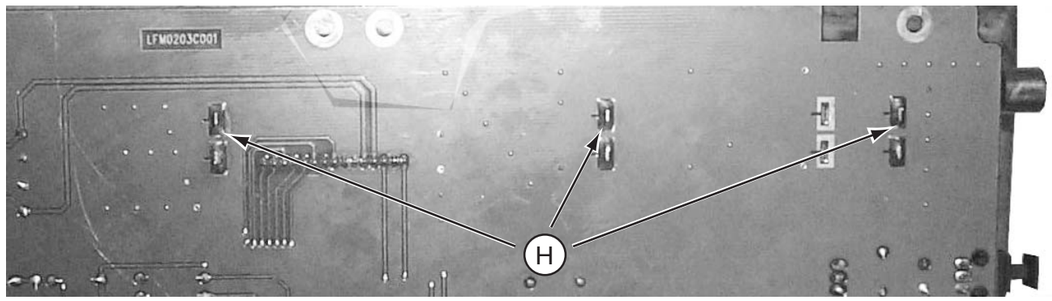


Figure 10

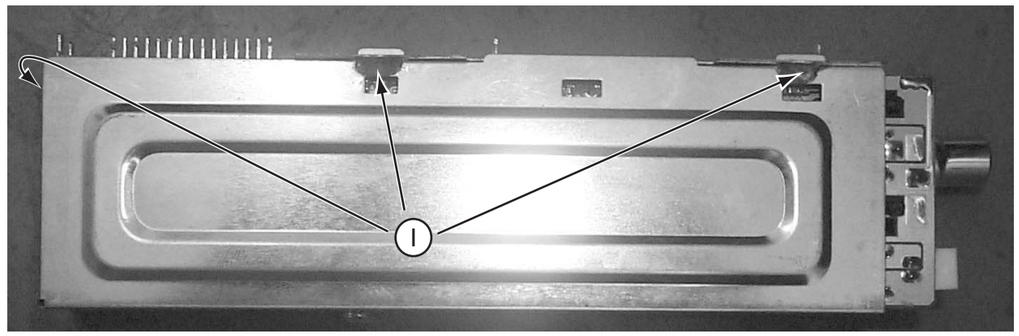


Figure 11

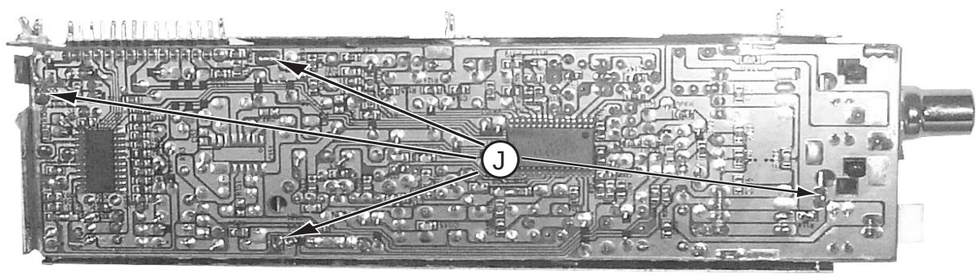
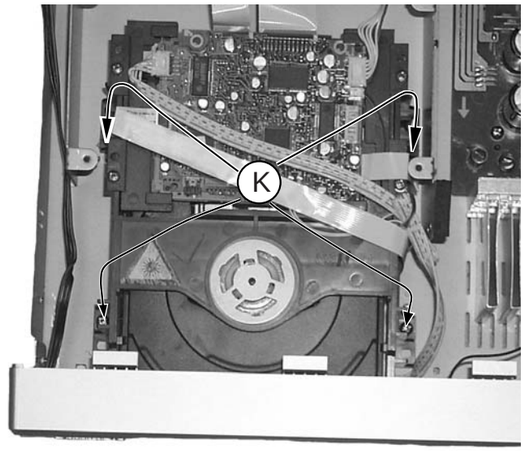


Figure 12

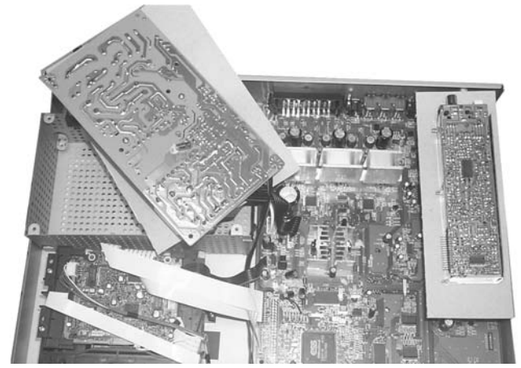
SERVICE POSITIONS

Service position A

Loosen 4 screws "K" to remove the DVD module as shown below

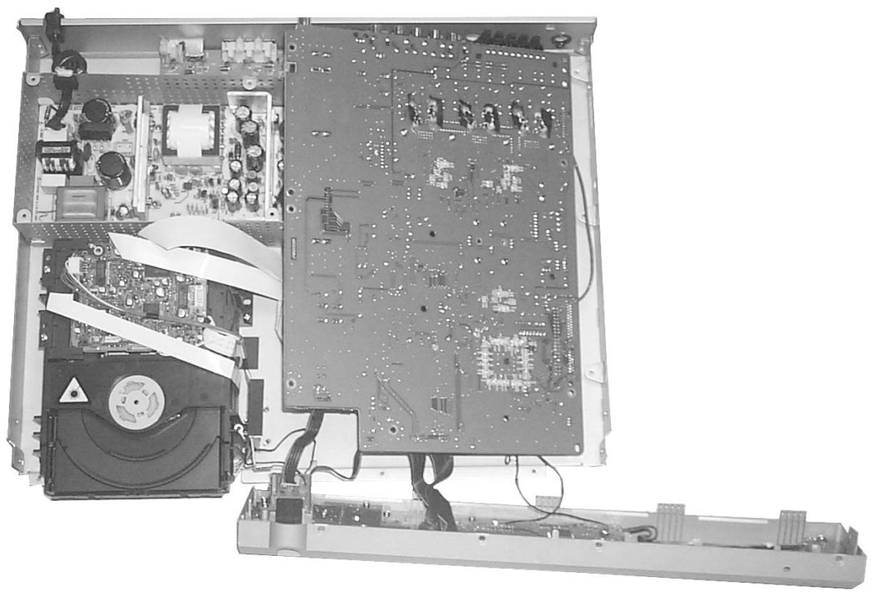


Service position B



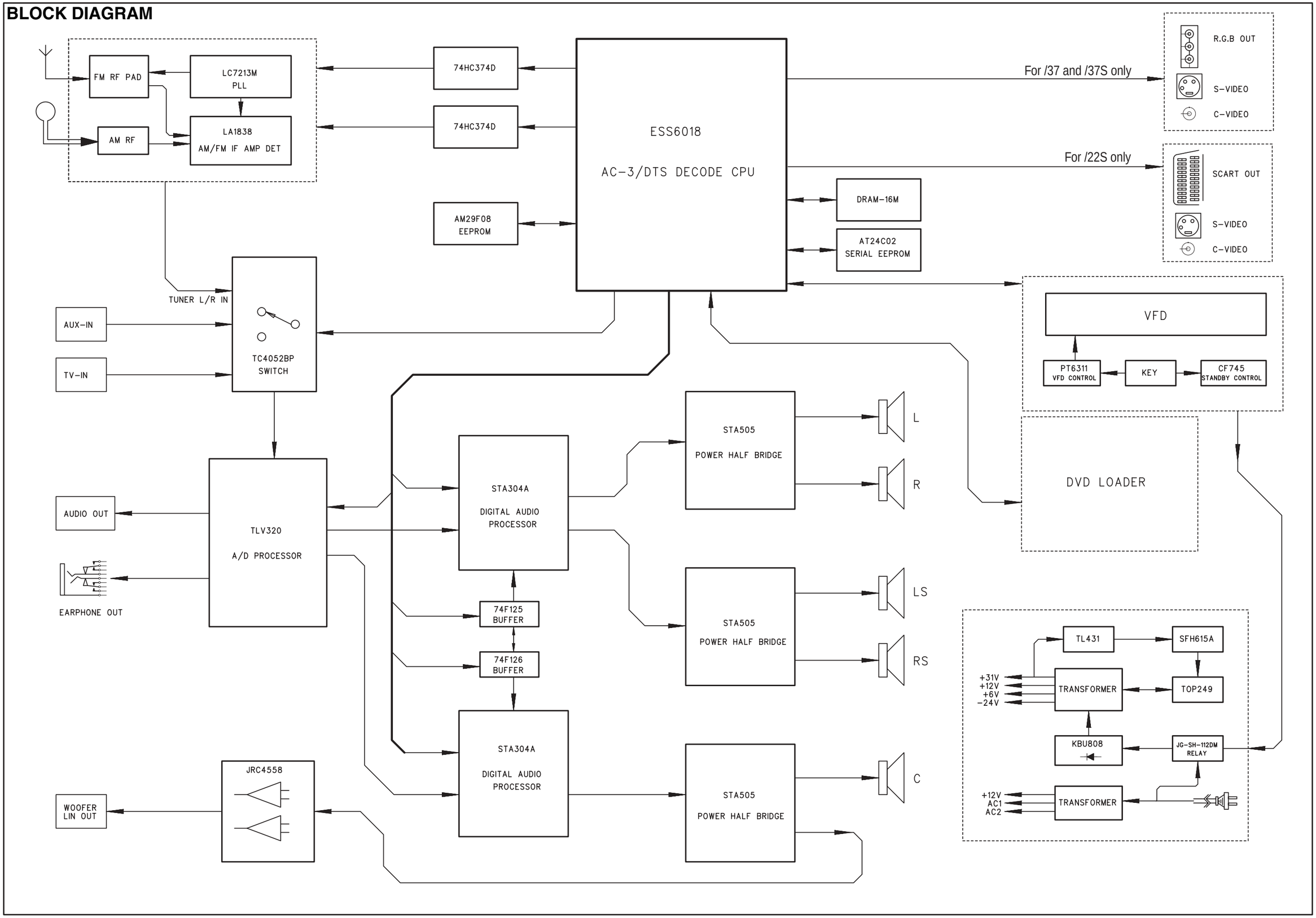
Note: In some service positions the components or copper patterns of one board may risk touching its neighbouring pc boards or metallic parts. To prevent such short-circuit use a piece of hard paper or other insulating material between them.

Service position C



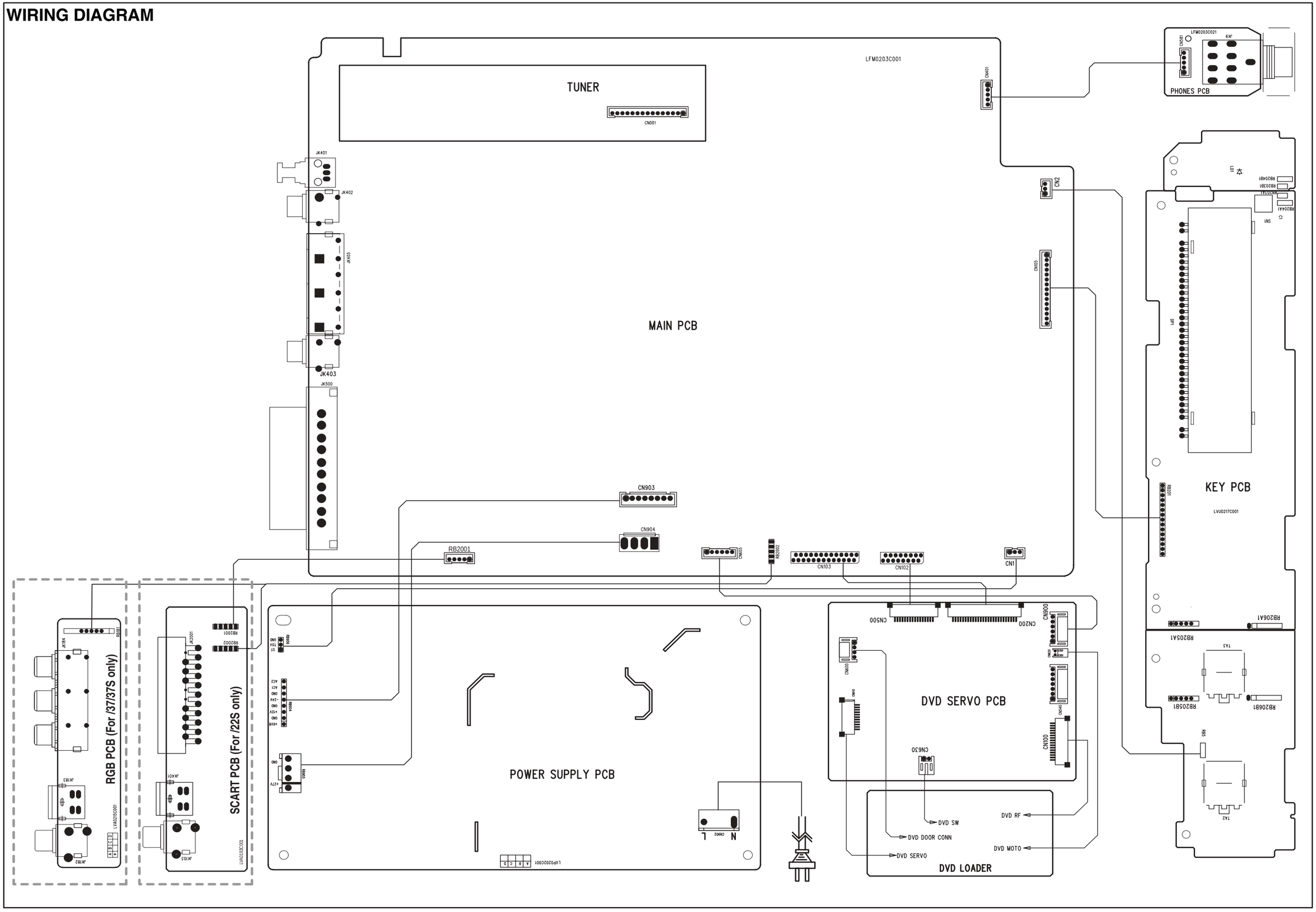
4-1

BLOCK DIAGRAM



4-2

WIRING DIAGRAM



KEY / VOLUME / LED BOARD

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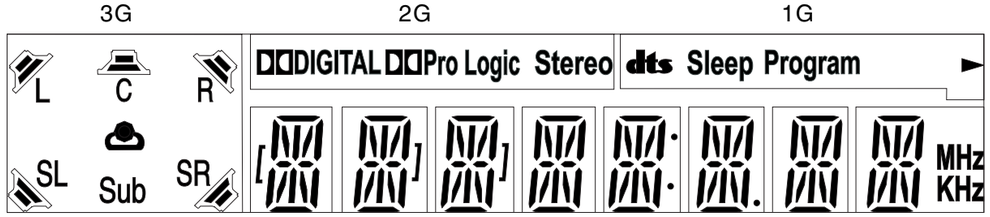
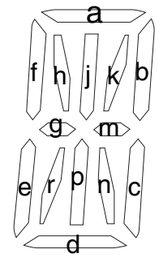
FTD DISPLAY PIN ASSIGNMENT





(4G-11G)

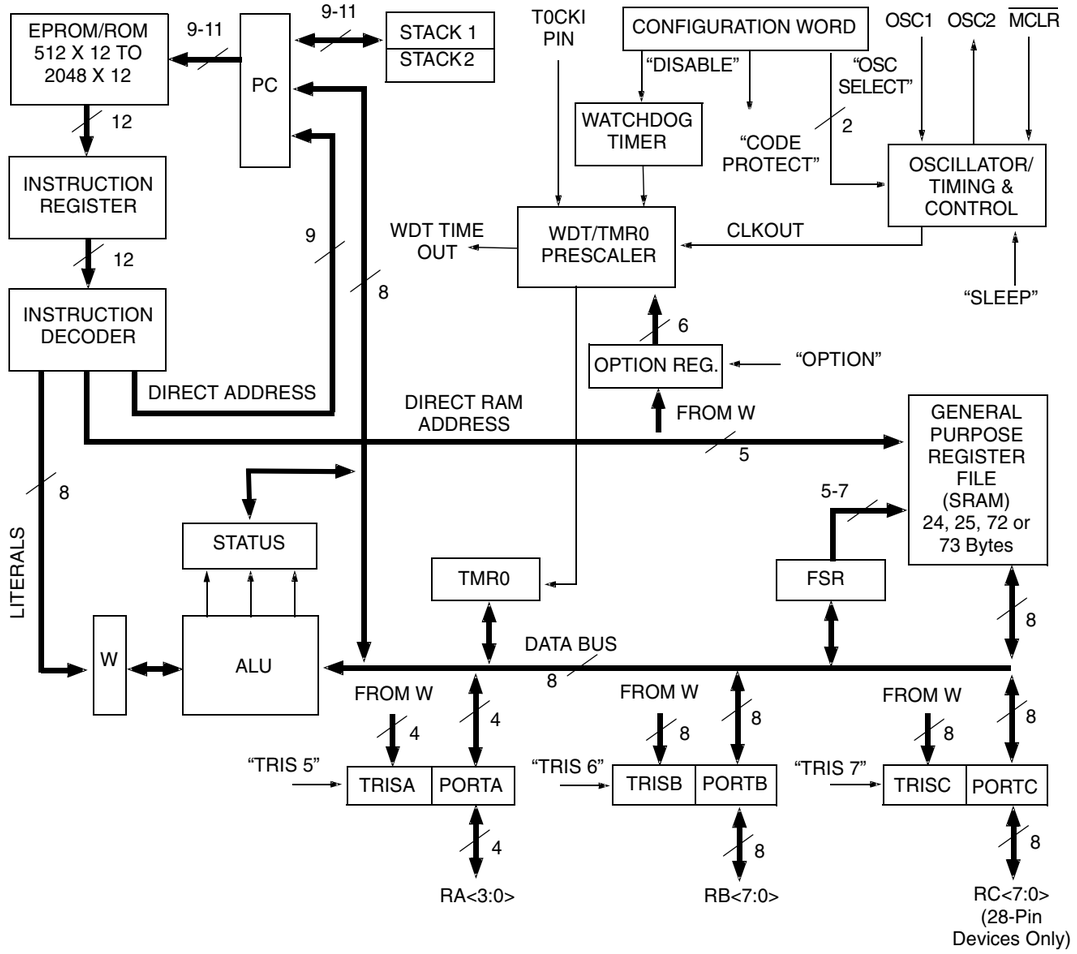
	1G	2G	3G	4G	5G	6G	7G	8G	9G	10G	11G
P1	Program	DIGITAL	R	a	a	a	a	a	a	a	a
P2	Sleep	ProLogic	C	b	b	b	b	b	b	b	b
P3	dts	Stereo	L	h	h	h	h	h	h	h	h
P4				j	j	j	j	j	j	j	j
P5			SL	k	k	k	k	k	k	k	k
P6			Sub	f	f	f	f	f	f	f	f
P7			SR	g	g	g	g	g	g	g	g
P8				m	m	m	m	m	m	m	m
P9	►			e	e	e	e	e	e	e	e
P10				r	r	r	r	r	r	r	r
P11				p	p	p	p	p	p	p	p
P12				n	n	n	n	n	n	n	n
P13				c	c	c	c	c	c	c	c
P14				d	d	d	d	d	d	d	d
P15				[	]	]		Col	Dp		MHz
P16											KHz

PIN CONNECTION

PIN NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
CONNECTION	F1	F2	NP	1G	2G	3G	4G	5G	6G	7G	8G	9G	10G	11G	NC	NC	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	P11	P12	P13	P14	P15	P16	NP	F2	F2

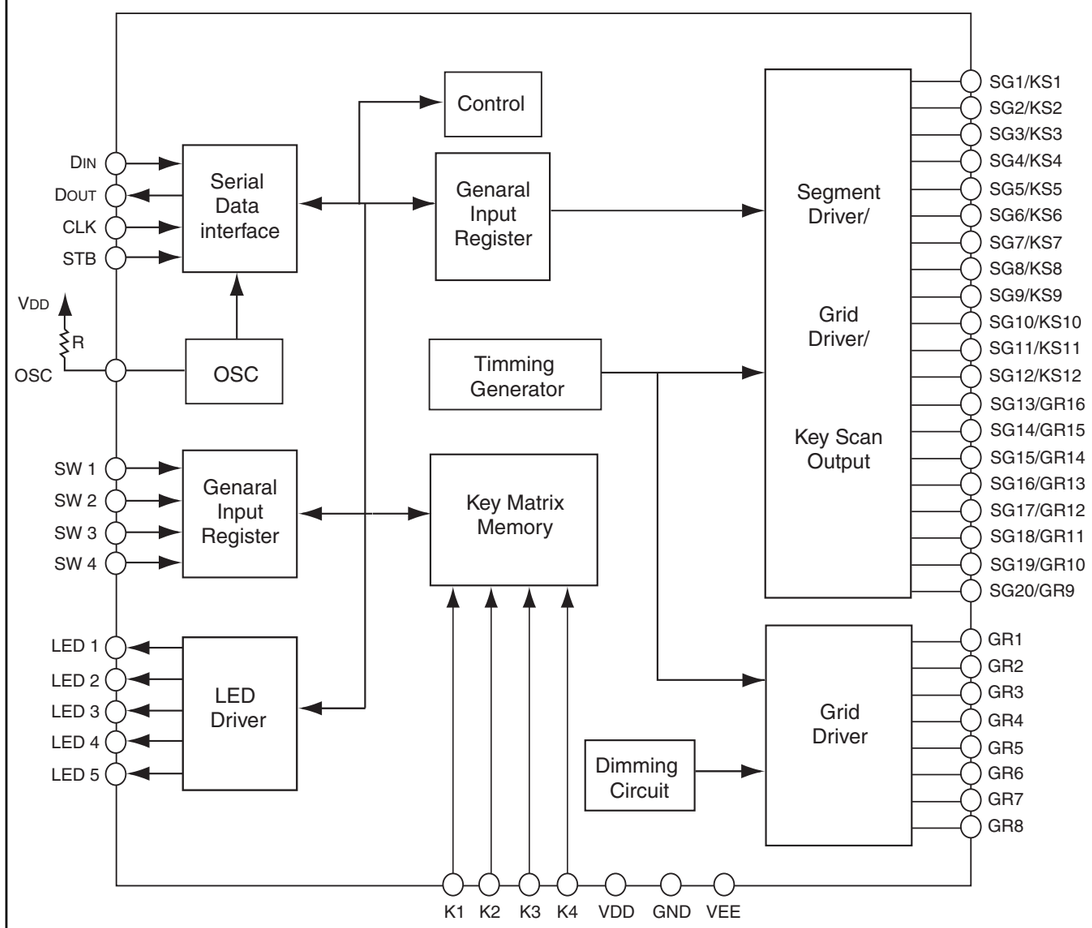
Note
1. Fn: Filament pin
2. nG : Grid pin
3. Pn : Anode pin
4. NP : No Pin
5. NC : No Connection pin

CF745 INTERNAL BLOCK DIAGRAM



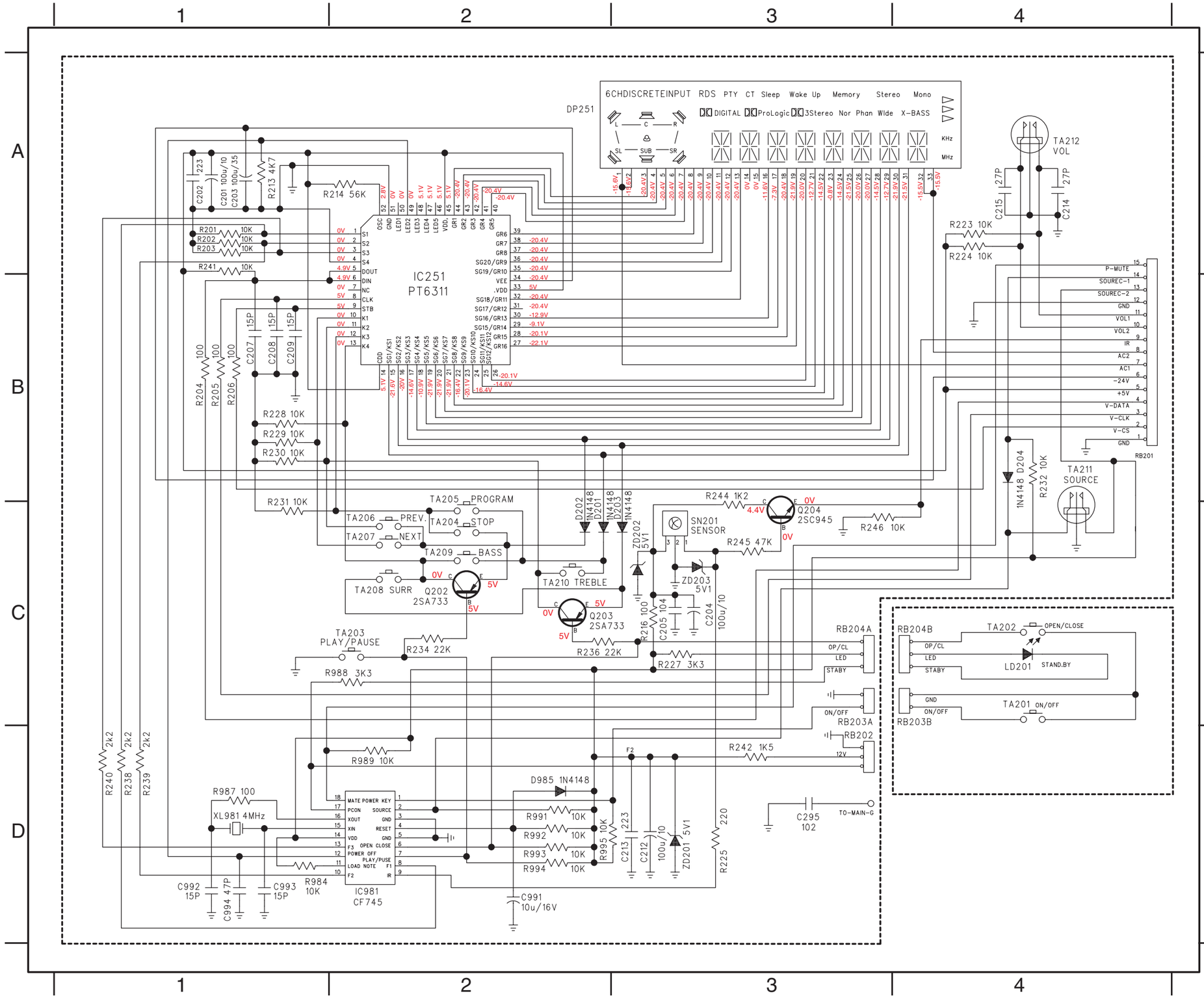
5-2

PT6311 INTERNAL BLOCK DIAGRAM



5-3

CIRCUIT DIAGRAM

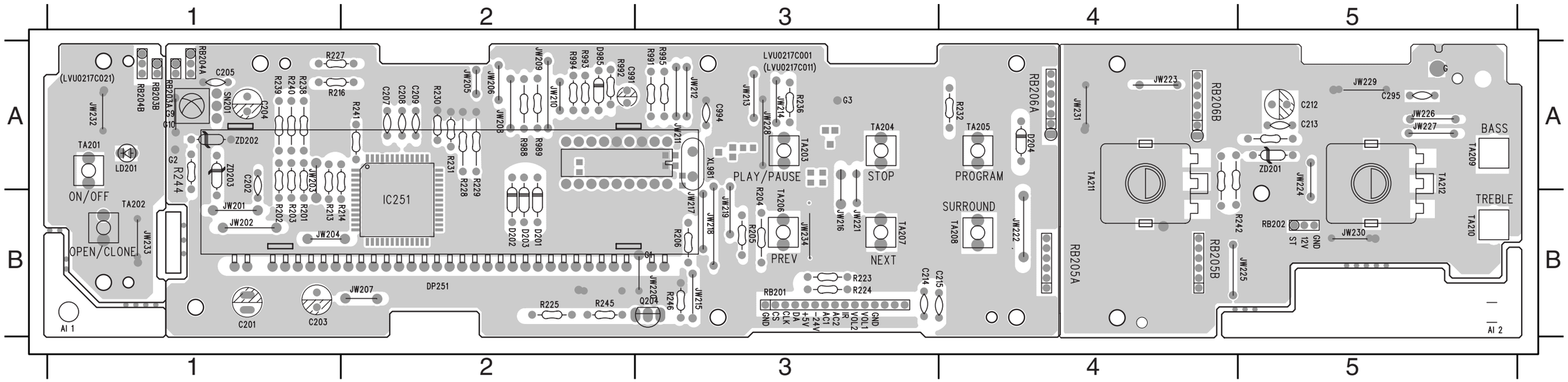


C201	A1	R242	D3
C202	A1	R244	B3
C203	A1	R225	D3
C204	C3	R245	C3
C205	C3	R246	C3
C207	B1	R250	C2
C208	B1	R251	C2
C209	B1	R984	D1
C212	D3	R987	D1
C213	D3	R988	C2
C214	A4	R989	D2
C215	A4	R991	D2
C295	D3	R992	D2
C991	D2	R993	D2
C992	D1	R994	D2
C993	D1	R995	D2
C994	D1	RB201	B4
D201	C2	RB202	D3
D202	C2	RB203A	C3
D203	C3	RB203B	C4
D204	B4	RB204A	C3
D985	D2	RB204B	C4
DP251	A2	SN201	C3
IC251	B2	TA201	C4
IC981	D2	TA202	C4
LD20	C4	TA203	C1
Q202	C2	TA204	C2
Q203	C2	TA205	B2
Q204	C3	TA206	C2
R201	A1	TA207	C2
R202	A1	TA208	C2
R203	A1	TA209	C2
R204	B1	TA210	C2
R205	B1	TA211	B4
R206	B1	TA212	A4
R213	A1	XL981	D1
R214	A2	ZD201	D3
R216	C3	ZD202	C3
R223	A4	ZD203	C3
R224	A4		
R227	C3		
R228	B1		
R229	B1		
R230	B1		
R231	C1		
R232	B4		
R234	C2		
R236	C2		
R238	D1		
R239	D1		
R240	D1		
R241	A1		

5-4

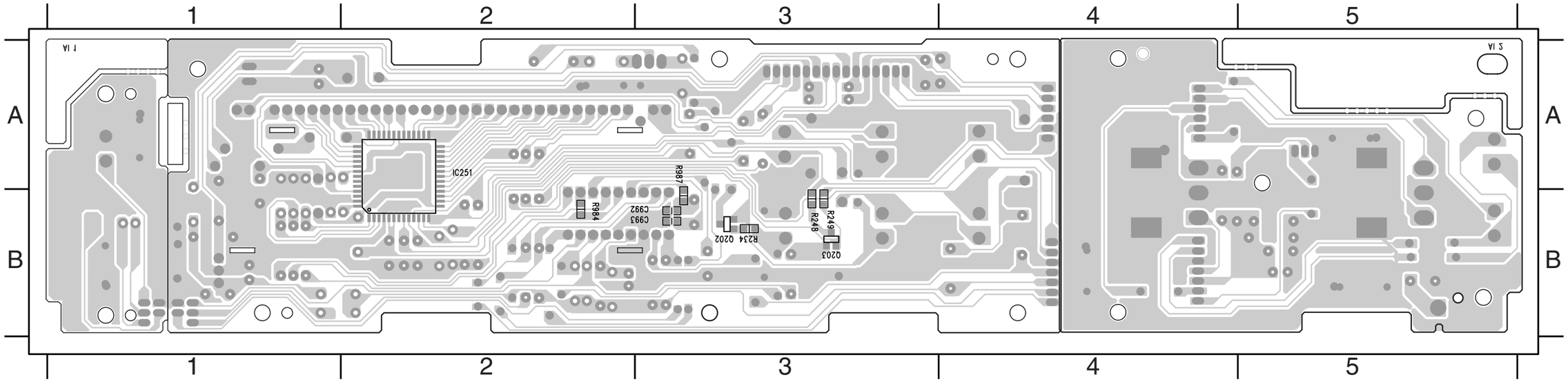
PCB LAYOUT TOP VIEW

C201	B1	C213	A5	D985	A2	JW207	B2	JW216	A3	JW225	B5	JW234	A3	R214	B2	R231	A2	R245	B2	RB201	A3	RB206B	A4	TA208	A4
C202	A1	C214	A3	DP251	B2	JW208	A2	JW217	B3	JW226	A5	Q204	B3	R216	A1	R232	A4	R246	B3	RB202	B5	SN201	A1	TA209	A5
C203	B1	C215	A4	LD201	A1	JW209	A2	JW218	B3	JW227	A5	R201	A1	R223	A3	R236	A3	R988	A2	RB204B	A1	TA201	A1	TA210	B5
C204	A1	C295	A5	JW201	B1	JW210	A2	JW219	B3	JW228	A3	R202	A1	R224	A3	R238	A1	R989	A2	RB203B	A1	TA202	B1	TA211	A4
C205	A1	C994	A3	JW202	B1	JW211	A3	JW220	B3	JW229	A5	R203	A1	R225	B2	R239	A1	R991	A3	RB203A	A1	TA203	A3	TA212	A5
C207	A2	D201	B2	JW203	A1	JW212	A3	JW221	A3	JW230	B5	R204	B3	R227	A1	R240	A1	R992	A2	RB204A	A1	TA204	A3	XL981	A3
C208	A2	D202	B2	JW204	B1	JW213	A3	JW222	A4	JW231	A4	R205	B3	R228	A2	R241	A2	R993	A2	RB205A	A4	TA205	A4	ZD201	A5
C209	A2	D203	B2	JW205	A2	JW214	A3	JW223	A4	JW232	A1	R206	B3	R229	A2	R242	A5	R994	A2	RB205B	A4	TA206	A3	ZD202	A1
C212	A5	D204	A4	JW206	A2	JW215	B3	JW224	A5	JW233	B1	R213	A1	R230	A2	R244	A1	R995	A3	RB206A	A4	TA207	A3	ZD203	A1



PCB LAYOUT BOTTOM VIEW

C992	B3	Q202	B3	Q203	A3	R248	A3	R984	B2
C993	B3	IC251	A2	R234	B3	R249	A3	R987	B3



ELECTRICAL PARTS LIST - KEY, VOLUME & LED BOARDS

MISCELLANEOUS

SN201	9965 000 13071	IRT SENSOR IRM-2038F4 W/GND
TA201	4822 276 13648	TACT SWITCH
TA202	4822 276 13648	TACT SWITCH
TA203	4822 276 13648	TACT SWITCH
TA204	4822 276 13648	TACT SWITCH
TA205	4822 276 13648	TACT SWITCH
TA206	4822 276 13648	TACT SWITCH
TA207	4822 276 13648	TACT SWITCH
TA208	4822 276 13648	TACT SWITCH
TA209	4822 276 13648	TACT SWITCH
TA210	4822 276 13648	TACT SWITCH
TA211	9965 000 12539	ROTARY ENCODER EC16B24-204
TA212	9965 000 12539	ROTARY ENCODER EC16B24-204
XL981	9965 000 12540	CRYSTAL 4,00MHZ

CAPACITORS

C201	9965 000 14169	100uF 10V 20%
C202	4822 122 30103	22nF 80% 63V
C203	9965 000 12543	100uF 25V 20%
C204	9965 000 14169	100uF 10V 20%
C205	2038 554 00065	100nF +80/-20% Y5V 50V
C207	9965 000 12545	15pF 50V 5%
C208	9965 000 12545	15pF 50V 5%
C209	9965 000 12545	15pF 50V 5%
C212	9965 000 14169	100uF 10V 20%
C213	4822 122 30103	22nF 80% 63V
C214	9965 000 14171	27pF 50V 5%
C215	9965 000 14171	27pF 50V 5%
C217	9965 000 16685	6800pF 50V 10%
C295	5322 122 32331	1nF 10% 100V
C991	9965 000 12474	10uF /16V 20%
C992	9965 000 14150	15pF 50V 5%
C993	9965 000 14150	15pF 50V 5%
C994	9965 000 14172	47pF 50V 5%

RESISTORS

R201	4822 050 21003	10K 1% 0,6W
R202	4822 050 21003	10K 1% 0,6W
R203	4822 050 21003	10K 1% 0,6W
R204	4822 050 21001	100R 1% 0,6W
R205	4822 050 21001	100R 1% 0,6W
R206	4822 050 21001	100R 1% 0,6W
R213	9965 000 09725	4,7K 1/6W 5% CF
R214	9965 000 09727	56K 1/6W 5% CF
R216	4822 050 21001	100R 1% 0,6W
R223	4822 050 21003	10K 1% 0,6W
R224	4822 050 21003	10K 1% 0,6W
R225	9965 000 12549	220R 1/6W 5% CF
R227	4822 050 23302	3,3K 1% 0,6W
R228	4822 050 21003	10K 1% 0,6W
R229	4822 050 21003	10K 1% 0,6W
R230	4822 050 21003	10K 1% 0,6W
R231	4822 050 21003	10K 1% 0,6W
R232	4822 050 21003	10K 1% 0,6W
R234	4822 051 20223	22K 5% 0,1W
R236	4822 050 22203	22K 1% 0,6W
R238	9965 000 12515	2,2K 1/6W 5% CF
R239	9965 000 12515	2,2K 1/6W 5% CF
R240	9965 000 12515	2,2K 1/6W 5% CF
R241	4822 050 21003	10K 1% 0,6W
R242	4822 050 21502	1,5K 1% 0,6W
R244	9965 000 12630	1,2K 1/6W 5%
R245	4822 050 24703	47K 1% 0,6W
R246	4822 050 21003	10K 1% 0,6W
R248	4822 051 20008	0R JUMPER 0805
R249	4822 051 20008	0R JUMPER 0805
R250	4822 117 10837	100K 1% 0,1W
R251	4822 117 10837	100K 1% 0,1W
R984	9965 000 12484	10K 1/10W 5%
R987	4822 050 21001	100R 1% 0,6W
R988	4822 050 23302	3,3K 1% 0,6W
R989	4822 050 21003	10K 1% 0,6W
R991	4822 050 21003	10K 1% 0,6W
R992	4822 050 21003	10K 1% 0,6W
R993	4822 050 21003	10K 1% 0,6W
R994	4822 050 21003	10K 1% 0,6W
R995	4822 050 21003	10K 1% 0,6W

DIODES

D201	4822 130 30621	1N4148
D202	4822 130 30621	1N4148
D203	4822 130 30621	1N4148
D204	4822 130 30621	1N4148
D985	4822 130 30621	1N4148
DP251	9965 000 12538	VFD DISPLAY
LD201	9965 000 14174	LED 3DIA RED HI-LIGHT
ZD201	4822 130 34233	BZX79-B5V1
ZD202	4822 130 34233	BZX79-B5V1
ZD203	4822 130 34233	BZX79-B5V1

TRANSISTORS & INTEGRATED CIRCUITS

IC251	9965 000 12550	PT6311(PTC)
IC981	9965 000 14173	CF745
Q202	9965 000 14175	2SA733Q,P
Q203	9965 000 14175	2SA733Q,P
Q204	4822 130 41198	2SC945P

Note: Only the parts mentioned in this list are normal service spare parts.

TUNER BOARD

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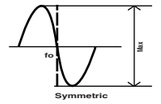
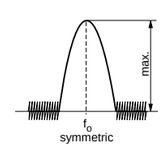
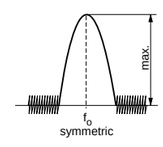
6-1

TUNER ADJUSTMENT TABLE

Waverange	Input frequency	Input	Tuned to	Adjust	Output	Scope/Voltmeter
VARICAP ALIGNMENT						
FM 87.5 - 108MHz (50kHz grid)			108MHz	5130		6.5V ±0.2V
			87.5MHz	check		1.5V ±0.5V
AM 531 - 1602kHz (9kHz grid) (22S / 30S / 21R / 21H)			1602KHz	TC002		7.8V ±0.2V
			531KHz	T003	◇1	1.1V ±0.2V
AM 530-1700kHz (10kHz grid) (21L / 21L / 37S)			1700KHz	TC002		8.0V ±0.2V
			530KHz	T003		1.1V ±0.2V
FM - IF						
FM	10.7MHz, 50mV continuous wave	◇F	IC 101 pin 23 — short circuit to block AFC — 200P	T105	◇2	
FM - RF						
FM	108MHz	◇A	108MHz			MAX
	87.5MHz	mod=1kHz Δf=±22.5kHz	87.5MHz			
AM IF						
AM	450kHz Connect pin 29 of IC 101 (AM Osc.) with short wire to ground (pin 28)	◇C Δf = ±0.5kHz V_{RF} = 3mV	IC 101 pin 24 — 100nF — R220	T102	◇4	
AM AFC **MW**						
AM RF [3]						
MW	1557kHz	◇B Δf = ±3.0kHz V_{RF} as low as possible	1557kHz	TC001	◇4	
	576kHz		576kHz	T002		
MW	1650kHz		1650kHz	TC001		
	580kHz		580kHz	T002		

Use Service Testprogram. By selecting the TUNER TEST test frequencies will be stored as preset frequencies automatically.

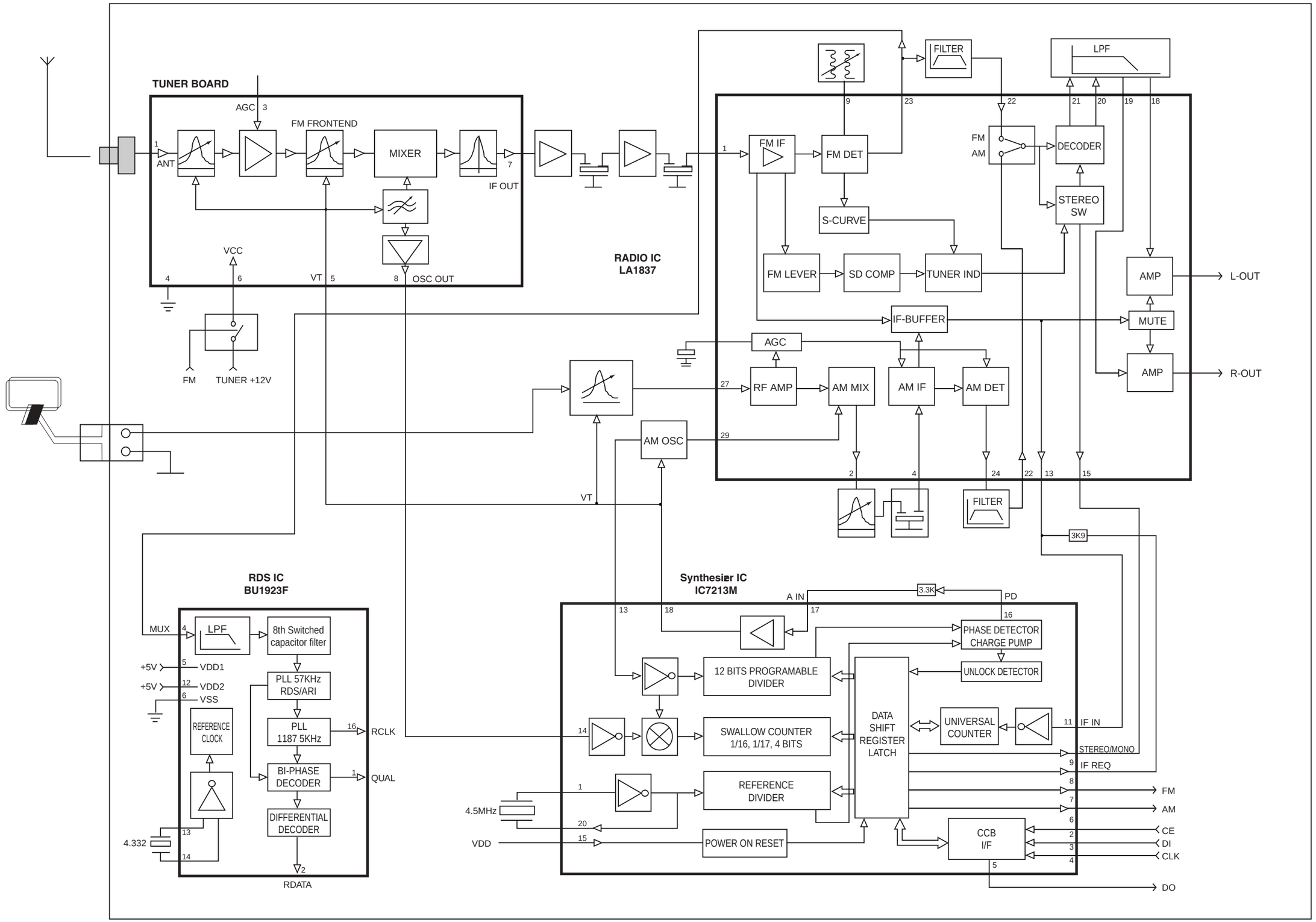
[1] If sensitivity of frequency counter is too low adjust to max. channel separation (input signal: stereo left 90% + 9%, adjust output on right channel to minimum)

[2] RC network serves for damping the IF-filter while adjusting the other one.

[3] For AM RF adjustments the original frame antenna has to be used!

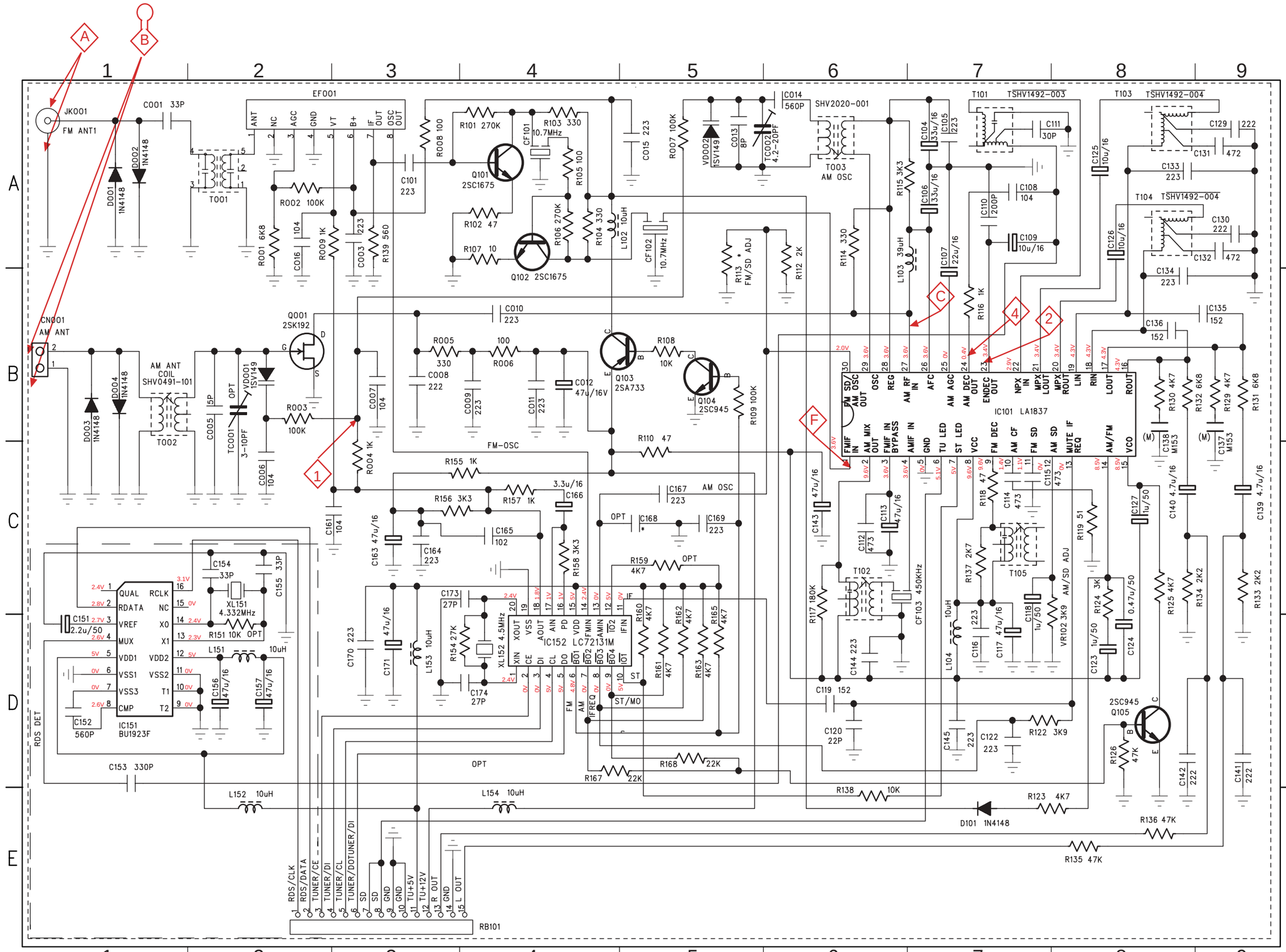
6-2

BLOCK DIAGRAM



6-3

CIRCUIT DIAGRAM

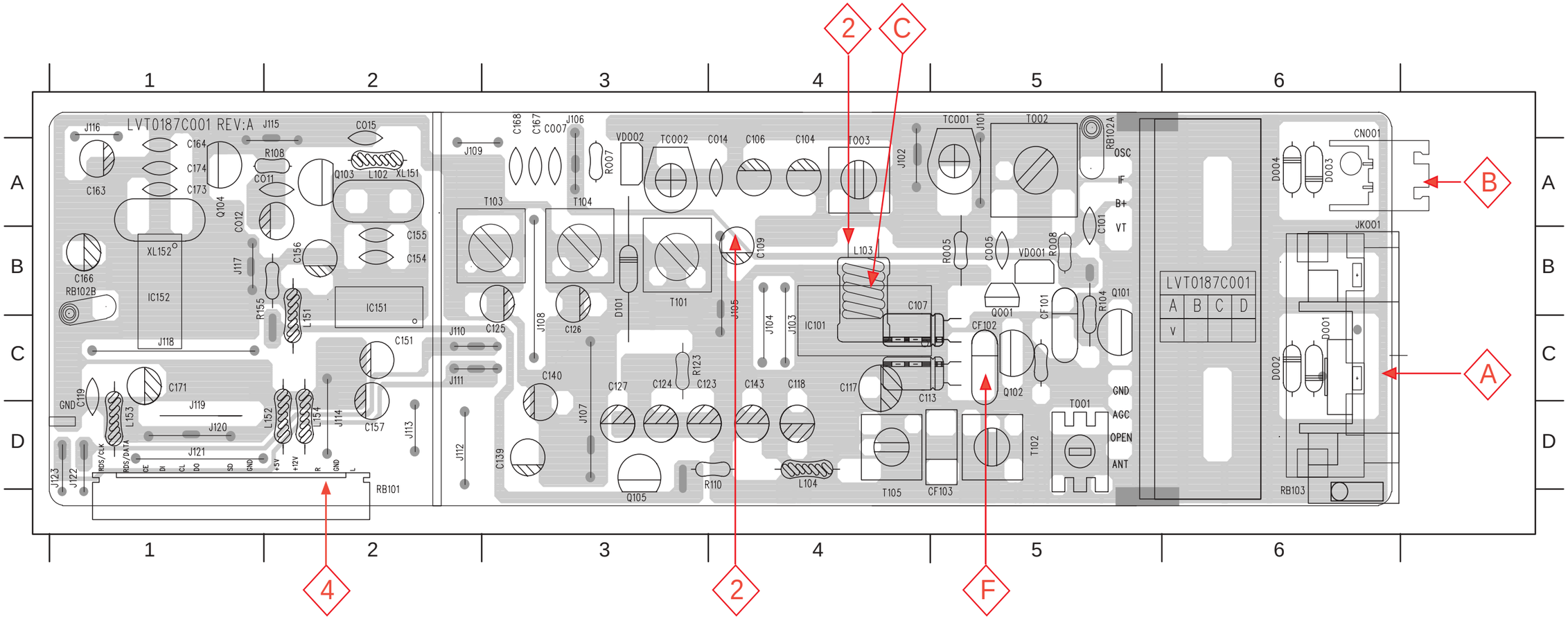


C001	A1	JK001	A1
C003	A3	L102	A5
C005	A2	L103	B7
C006	C2	L104	D7
C007	C3	L151	D2
C008	B3	L152	E2
C009	B4	L153	D3
C010	B4	L154	E4
C011	B4	Q101	A4
C012	B4	Q102	B4
C013	A4	Q103	B5
C014	A6	Q104	B5
C015	A5	Q105	D8
C016	A2	Q001	B2
C101	A3	R001	B2
C104	A7	R002	A2
C105	A7	R003	C3
C106	A7	R004	C3
C107	B7	R005	B3
C108	A8	R006	B4
C109	A8	R007	A5
C110	A7	R008	A3
C111	A7	R009	A3
C112	C6	R101	A4
C113	C6	R102	A4
C114	C7	R103	A4
C115	C7	R104	A4
C116	D7	R105	A4
C117	D7	R106	A4
C118	C7	R107	B4
C119	D9	R108	B5
C120	D6	R109	B5
C122	D7	R110	C5
C123	D8	R112	A3
C124	D8	R113	B6
C125	A8	R114	B6
C126	A8	R115	A7
C127	C8	R116	B7
C129	A9	R117	D6
C130	A9	R118	C7
C131	A9	R119	C8
C132	A9	R122	D7
C133	A9	R123	E7
C134	B8	R124	D8
C135	B5	R125	D8
C136	B8	R126	E8
C137	C9	R129	B9
C138	C8	R130	B8
C139	C9	R131	B9
C140	C9	R132	B9
C141	D9	R133	D9
C142	E9	R134	C9
C143	C6	R135	E8
C144	D6	R136	E8
C145	D7	R137	C7
C151	D1	R138	E6
C152	D1	R151	D2
C153	E1	R154	D4
C154	C2	R155	C4
C155	C2	R156	C3
C156	D2	R157	C4
C157	D2	R158	C4
C161	C3	R159	C5
C163	C3	R160	D5
C164	C3	R161	D5
C165	C4	R162	D5
C166	C4	R163	D5
C167	C5	R165	D5
C168	C5	R167	E4
C169	C5	R168	E5
C170	D3	RB101	E3
C171	D3	T101	A7
C173	D4	T102	D6
C174	D4	T103	A9
CF101	A4	T104	A9
CF102	A5	T105	C7
CF103	D7	TC001	B2
CN001	B1	TC002	A6
D101	E7	T001	A2
D001	A1	T002	C2
D002	A1	T003	A6
D003	B1	VD001	B2
D004	B1	VD002	A5
EF001	A2	VR101	B5
IC101	C7	VR102	D8
IC151	D1	XL151	D2
IC152	D4	XL152	D4

6-4

PCB LAYOUT TOP VIEW

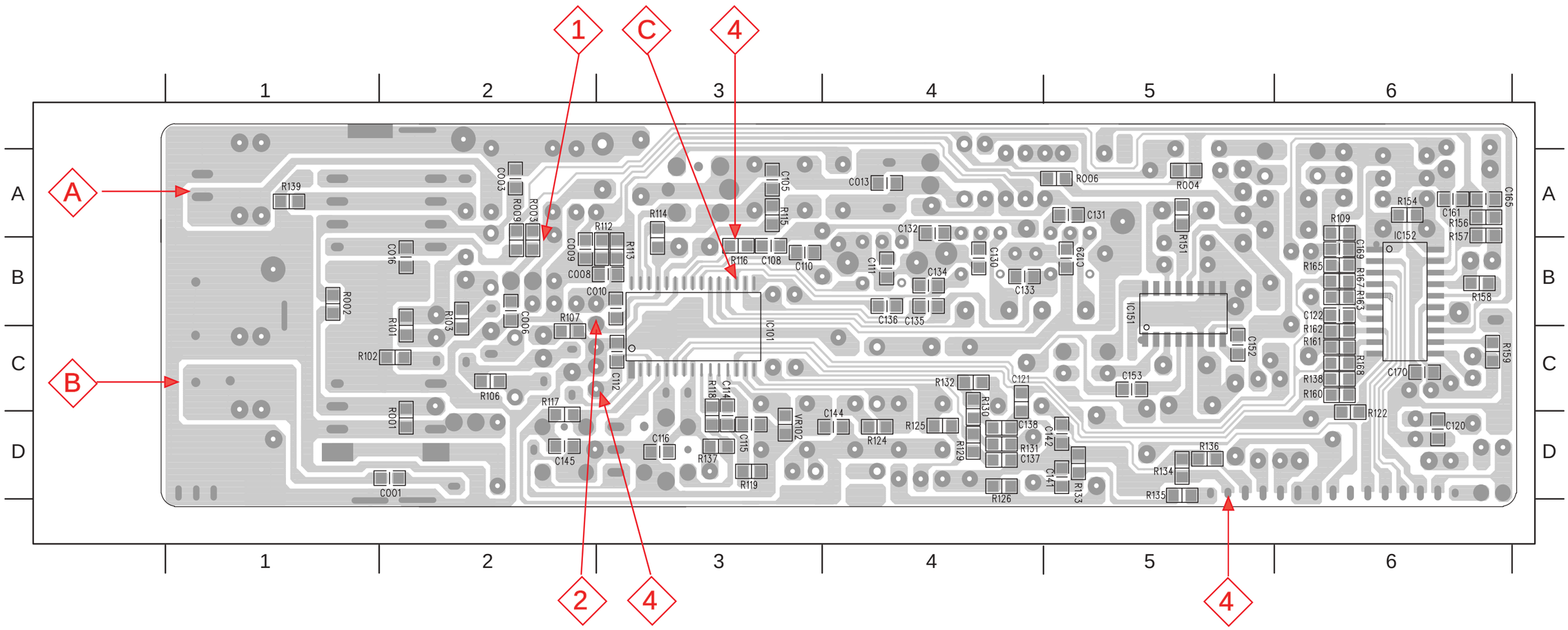
C005	B5	C106	A4	C124	D3	C153	C2	C167	A3	CN001	A6	J103	C4	J111	C2	J119	D1	L104	D4	Q101	B5	R108	A2	T002	A5	TC002	A3
C007	A3	C107	C4	C125	C3	C154	B2	C168	A3	D001	C6	J104	C4	J112	D2	J120	D1	L151	C2	Q102	C5	R110	D4	T003	A4	VD001	B5
C011	A2	C109	B4	C126	C3	C155	B2	C171	C1	D002	C6	J105	B4	J113	D2	J121	D1	L152	D2	Q103	A2	R123	C3	T101	B3	VD002	A3
C012	B1	C113	C4	C127	D3	C156	B2	C173	A1	D003	A6	J106	A3	J114	D2	J122	D1	L153	D1	R005	B4	R155	B2	T102	D5	XL151	A2
C014	A4	C117	C4	C139	D3	C157	D2	C174	A1	D004	A6	J107	D3	J115	A2	J123	D1	L154	D2	R007	A3	RB103	D6	T103	A3	XL152	B1
C015	A2	C118	D4	C140	C3	C163	A1	CF101	C5	D101	B3	J108	C3	J116	A1	JK001	B6	Q001	B5	R008	B5	RB101	D2	T104	A3		
C101	A5	C119	C1	C143	D4	C164	A1	CF102	C5	J101	A5	J109	A2	J117	B1	L102	A2	Q104	A1	R104	B5	RB102A	A5	T105	D4		
C104	A4	C123	D3	C151	C2	C166	B1	CF103	D5	J102	A4	J110	C2	J118	C1	L103	B4	Q105	D3	R105	C5	T001	D5	TC001	A5		



6-5

PCB LAYOUT BOTTOM VIEW

C001	D2	C105	A3	C120	D6	C134	B4	C145	D2	IC152	A6	R102	C2	R115	A3	R129	D4	R137	D3	R160	C6
C003	A2	C108	B3	C121	C4	C135	B4	C152	C5	R001	D2	R103	B2	R116	B3	R130	C4	R138	C6	R161	C6
C006	B2	C110	B3	C122	B6	C136	B4	C161	A6	R002	B1	R106	C2	R117	C2	R131	D4	R151	A5	R162	C6
C008	B3	C111	B4	C129	B5	C137	D4	C165	A6	R003	A2	R107	C2	R118	C3	R132	C4	R154	A6	R163	B6
C009	B2	C112	C3	C130	B4	C138	D4	C169	B6	R004	A5	R109	A6	R119	D3	R133	D5	R156	A6	R165	B6
C010	B3	C114	C3	C131	A5	C141	D5	C170	C6	R006	A5	R112	B3	R122	D6	R134	D5	R157	B6	R167	B6
C013	A4	C115	D3	C132	A4	C142	D5	IC101	C3	R009	A2	R113	B3	R124	D4	R135	D5	R158	B6	R168	C6
C016	B2	C116	D3	C133	B4	C144	D4	IC151	B5	R101	B2	R114	A3	R126	D4	R136	D5	R159	C6	VR102	D3



6-6

ELECTRICAL PARTS LIST - TUNER BOARD

ELECTRICAL PARTS LIST - TUNER BOARD

MISCELLANEOUS

CN001	9965 000 12565	CONNECTOR 2PIN, AM ANTENNA	
EF001	9965 000 14228	FRONTEND KST-F404VA2FM	/21H/22S
EF001	9965 000 12566	FRONTEND FTE3-500H	/37/37S
JK001	9965 000 12567	FM ANTENNA SOCKET	
XL151	9965 000 14229	CRYSTAL 4,332MHZ	/22S
XL152	9965 000 14129	CRYSTAL 4,5MHZ HC-49/U	

CAPACITORS

C001	2238 861 18339	33PF 1% 50V 0805	
C003	9965 000 12573	0,022UF 50V 20%	
C005	9965 000 12574	5PF 50V +/-0,5PF	
C006	4822 126 14585	100NF 10% X7R 0805 50V	
C007	2038 554 00065	100NF +80-20% Y5V 50V	
C008	9965 000 12585	0,022UF 50V 10%	
C009	9965 000 12573	0,022UF 50V 20%	
C010	9965 000 12573	0,022UF 50V 20%	
C011	4822 122 30103	22NF 80% 63V	
C012	9965 000 12575	47UF 16V 20%	
C013	9965 000 13454	8PF 50V 5%	
C014	9965 000 12577	560PF 50V 5%	
C015	4822 122 30103	22NF 80% 63V	
C016	4822 126 14585	100NF 10% X7R 0805 50V	
C101	4822 122 30103	22NF 80% 63V	
C104	9965 000 13074	33UF 100V 20%	
C105	9965 000 12573	0,022UF 50V 20%	
C106	9965 000 13074	33UF 100V 20%	
C107	9965 000 13075	22UF 16V 20%	
C108	4822 126 14585	0,1UF 50V 10%	
C109	9965 000 12580	10UF 16V 20%	
C110	9965 000 12581	200PF 50V 5%	
C111	9965 000 12582	30PF 50V 5%	
C112	9965 000 12524	0,047UF 50V 20%	
C113	9965 000 13076	47UF 16V 20%	
C114	9965 000 12524	0,047UF 50V 20%	
C115	9965 000 12524	0,047UF 50V 20%	
C116	9965 000 12573	0,022UF 50V 20%	
C117	9965 000 13076	47UF 16V 20%	
C118	9965 000 12583	1UF 50V 20%	
C119	9965 000 13077	1500PF 50V 10%	
C120	5322 122 32658	22PF 5% 50V	
C122	9965 000 12573	0,022UF 50V 20%	
C123	9965 000 12583	1UF 50V 20%	
C124	9965 000 12584	0,47UF 50V 20%	
C125	9965 000 12580	10UF 16V 20%	
C126	9965 000 12580	10UF 16V 20%	
C127	9965 000 12583	1UF 50V 20%	
C129	9965 000 12585	0,0022UF 50V 10%	
C130	9965 000 12585	0,0022UF 50V 10%	
C131	5322 126 10223	4,7NF 10% X7R 63V	
C132	5322 126 10223	4,7NF 10% X7R 63V	
C133	9965 000 12573	0,022UF 50V 20%	
C134	9965 000 12573	0,022UF 50V 20%	
C135	4822 126 13344	1,5NF 5% 63V	
C136	4822 126 13344	1,5NF 5% 63V	
C137	4822 126 13188	15NF 5% X7R 63V	
C138	4822 126 13188	15NF 5% X7R 63V	
C139	9965 000 12586	4,7UF 16V 20%	
C140	9965 000 12586	4,7UF 16V 20%	
C141	9965 000 12585	0,0022UF 10% 50V	
C142	9965 000 14124	0,0022UF 10% 50V	
C143	9965 000 14125	47UF 16V 20%	
C144	9965 000 12573	0,022UF 50V 20%	
C145	9965 000 12573	0,022UF 50V 20%	
C151	9965 000 14227	2,2UF 16V 20%	/22S
C152	5322 116 80853	560PF 5%NP0 63V	/22S
C153	4822 126 13618	330PF 63V 1%	/22S
C154	5322 122 32072	33PF 2%NP0 100V	/22S
C155	5322 122 32072	33PF 2%NP0 100V	/22S
C156	9965 000 12575	47UF 16V 20%	/22S
C157	9965 000 12575	47UF 16V 20%	/22S
C161	4822 126 14585	100NF 10% X7R 0805 50V	
C163	9965 000 12575	47UF 16V 20%	
C164	4822 122 30103	22NF 80% 63V	
C165	9965 000 12588	1000PF 50V 5%	
C166	9965 000 13079	3,3UF 16V 20%	
C167	4822 122 30103	22NF 80% 63V	
C169	9965 000 12573	0,022UF 50V 20%	
C170	9965 000 12573	0,022UF 50V 20%	
C171	9965 000 13076	47UF 16V 20%	
C173	9965 000 12546	27PF 50V 5%	
C174	9965 000 12546	27PF 50V 5%	
TC001	4822 125 50692	TRIMMER 3-10PF	
TC002	9965 000 14128	TRIMMER 4,2-20PF N450	

RESISTORS

R001	9965 000 12591	6,8K 1/10W 5%	
R002	4822 117 10837	100K 1% 0,1W	
R003	4822 117 10837	100K 1% 0,1W	
R004	4822 051 20102	1K 5% 0,1W	
R005	9965 000 12592	330R 5% 1/6W	
R006	4822 117 11373	100R 1% RC12H 0805	except /37/37S
R007	4822 050 21004	100K 1% 0,6W	
R008	4822 050 21001	100R 1% 0,6W	
R009	4822 051 20102	1K 5% 0,1W	
R101	4822 051 20274	270K 1% 0,1W	
R102	4822 051 20479	47R 5% 0,1W	
R103	4822 117 13577	330R 1% RC12H 0805 1,25W	
R104	9965 000 12592	330R 1/6W 5% CF	
R105	4822 050 21001	100R 1% 0,6W	
R106	4822 051 20274	270K 1% 0,1W	
R107	4822 051 20109	10R 5% 0,1W	
R108	4822 050 21003	10K 1% 0,6W	
R109	4822 117 10837	100K 1% 0,1W	
R110	9965 000 12593	47R 1/6W 5% CF	
R112	4822 051 20332	3,3K 5% 0,1W	
R113	9965 000 12484	10K 1/10W 5%	/22S
R114	4822 117 13577	330R 1% RC12H 0805 1,25W	
R115	4822 051 20332	3K3 5% 0,1W	
R116	4822 051 20102	1K 5% 0,1W	
R117	2120 108 92641	180K 1% 0,1W	
R118	4822 051 20479	47R 5% 0,1W	
R119	4822 051 20519	51R 5% 0,1W	
R122	4822 051 20392	3K90 5% 0,1W	
R123	9965 000 09725	4,7K 1/6W 5% CF	
R124	4822 051 20302	3K 5% 0,1W	
R125	4822 051 20102	1K 5% 0,1W	
R126	9965 000 12482	47K 1/10W 5%	
R129	4822 051 20472	4K7 5% 0,1W	
R130	4822 051 20472	4K7 5% 0,1W	
R131	9965 000 12591	6,8K 1/10W 5%	
R132	9965 000 12591	6,8K 1/10W 5%	
R133	4822 117 11449	2K2 5% 0,1W 0805	
R134	4822 117 11449	2K2 5% 0,1W 0805	
R135	9965 000 12482	47K 1/10W 5%	
R136	9965 000 12482	47K 1/10W 5%	
R137	4822 117 12955	2K7 5% 1/10W	
R138	9965 000 12484	10K 1/10W 5%	
R139	4822 051 20561	560R 5% 0,1W	/21H/22S
R139	9965 000 12548	220R 5% 0,1W	/37/37S
R151	4822 051 20105	1M 5% 0,1W	/22S
R154	4822 051 20105	1M 5% 0,1W	
R155	9965 000 12519	1K 1/6W 5% CF	
R156	4822 051 20332	3K3 5% 0,1W	
R157	4822 051 20102	1K 5% 0,1W	
R158	4822 051 20332	3K3 5% 0,1W	
R159	4822 051 20472	4K7 5% 0,1W	
R160	4822 051 20472	4K7 5% 0,1W	
R161	4822 051 20472	4K7 5% 0,1W	
R162	4822 051 20472	4K7 5% 0,1W	
R163	4822 051 20472	4K7 5% 0,1W	
R165	4822 051 20472	4K7 5% 0,1W	
R167	4822 051 20223	22K 5% 0,1W	
R168	4822 051 20223	22K 5% 0,1W	
VR102	4822 051 20392	3K9 5% 0,1W	

COILS & FILTERS

CF101	4822 242 82181	CER FILTER SFE10,7MA	/21H/22S
CF101	4822 242 10614	CER FILTER SFE10,7MA	/37/37S
CF102	9965 000 12564	CER FILTER 10,7MHZ SFE-10,7MS	
CF103	9965 000 13181	CER FILTER 450KHZ SFU450B	
L102	9965 000 12568	CHOKE 10UH	
L103	9965 000 15872	CHOKE 39 MH	
L104	9965 000 12568	CHOKE 10UH	
L151	9965 000 12568	CHOKE 10UH	/22S
L152	9965 000 12568	CHOKE 10UH	/22S
L153	9965 000 12568	CHOKE 10UH	
L154	9965 000 12568	CHOKE 10UH	
T001	9965 000 12597	OSC FM S-8N	
T002	9965 000 15874	ANT OSC AM 4-6:10T 1-3: 86T	
T003	9965 000 13081	OSC AM 108UH	
T101	9965 000 12599	FILTER 78KHZ	
T102	9965 000 14126	IFT AM 455KHZ	
T103	9965 000 12600	FILTER 16KHZ	
T104	9965 000 12600	FILTER 16KHZ	
T105	9965 000 14127	FM IFT 10,7MHZ Q=60 MIN	

DIODES

D001	4822 130 30621	1N4148	
D002	4822 130 30621	1N4148	
D003	4822 130 30621	1N4148	
D004	4822 130 30621	1N4148	
D101	4822 130 30621	1N4148	
VD001	4822 130 81673	1SV149	
VD002	4822 130 81673	1SV149	

TRANSISTORS & INTEGRATED CIRCUITS

IC101	9965 000 12594	LA1837 SANYO	
IC151	9965 000 12596	BU1923F	/22S
IC152	9965 000 12595	LC72131M	
Q001	4822 130 63173	2SK192AY	
Q101	4822 130 41595	2SC1675L	
Q102	4822 130 41595	2SC1675L	
Q103	4822 130 63876	2SA733R	
Q104	4822 130 41198	2SC945P	
Q105	4822 130 41198	2SC945P	

Note: Only the parts mentioned in this list are normal service spare parts.

DVD LOADER KIT572SE

It is not recommended for component repair on this Module but to replace the major assembly when it becomes defective. Therefore limited service parts list are published in this chapter.

The Circuit & Layout diagrams are published for reference only. The repair assistance on DVD section is given on Chapter 2.

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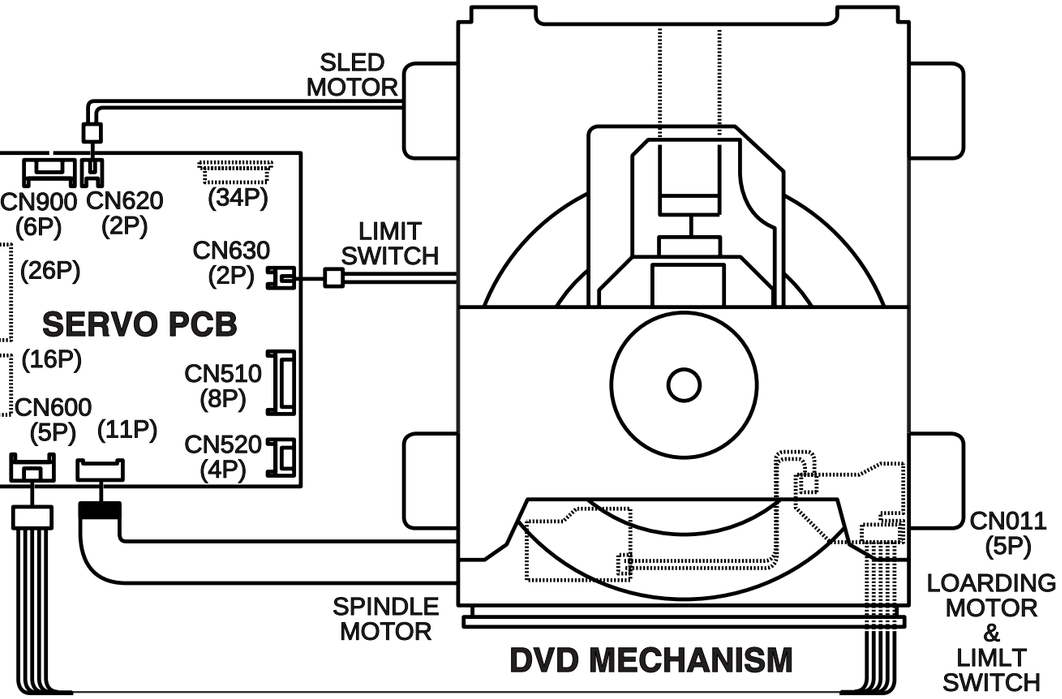
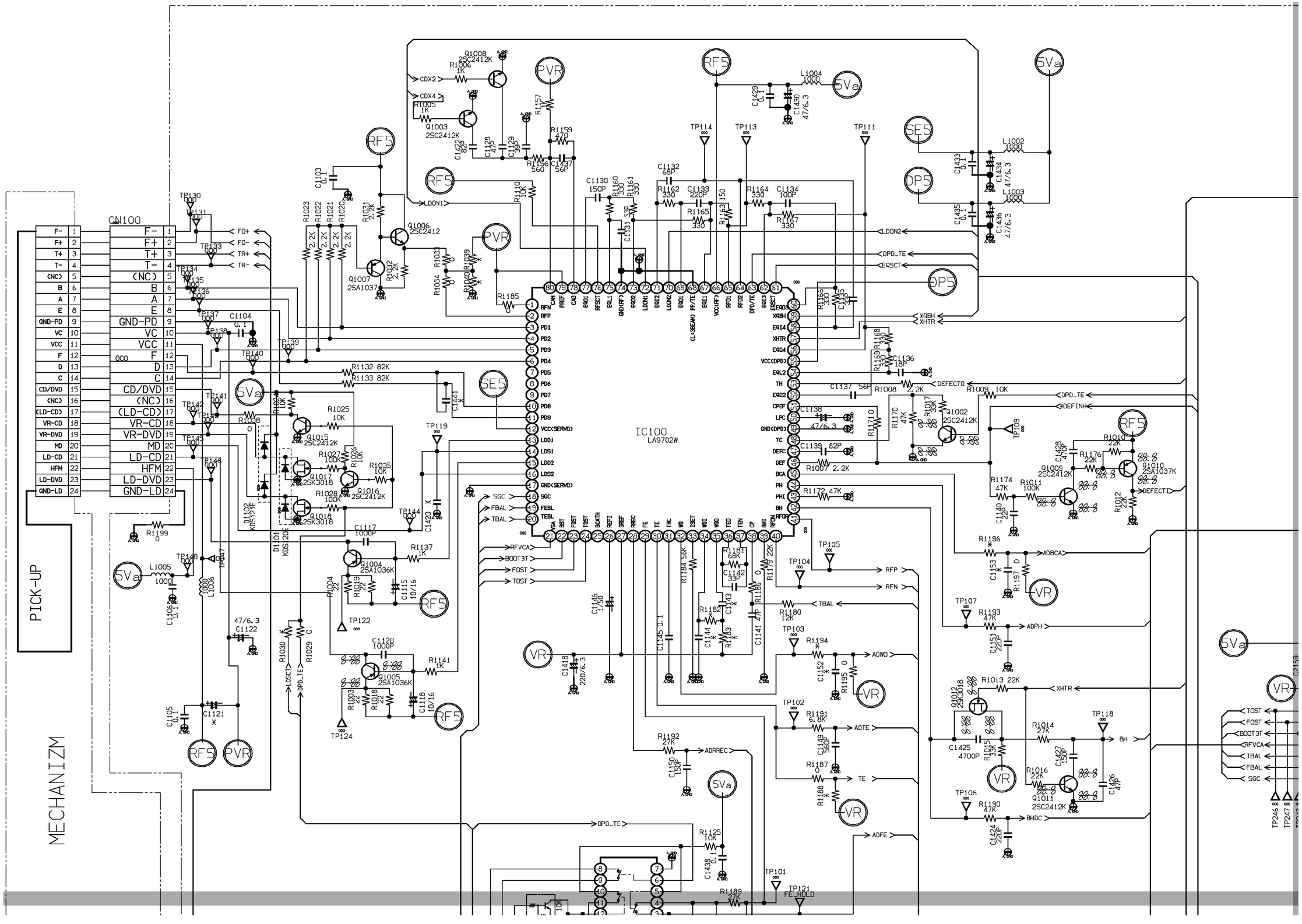
7-1

WIRING CONNECTION



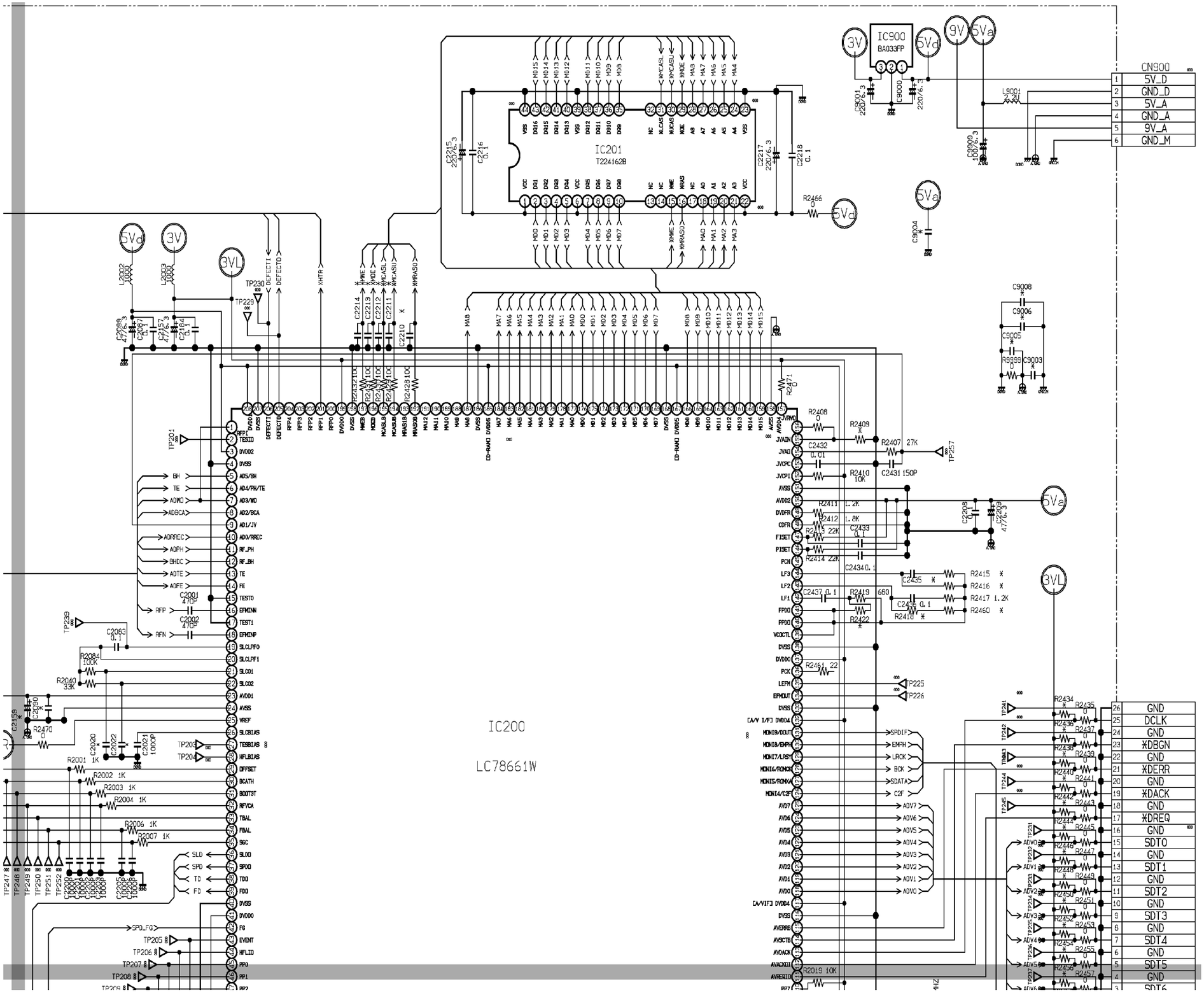
7-2

SCHEMATIC DIAGRAM (TOP LEFT) - SERVO BOARD



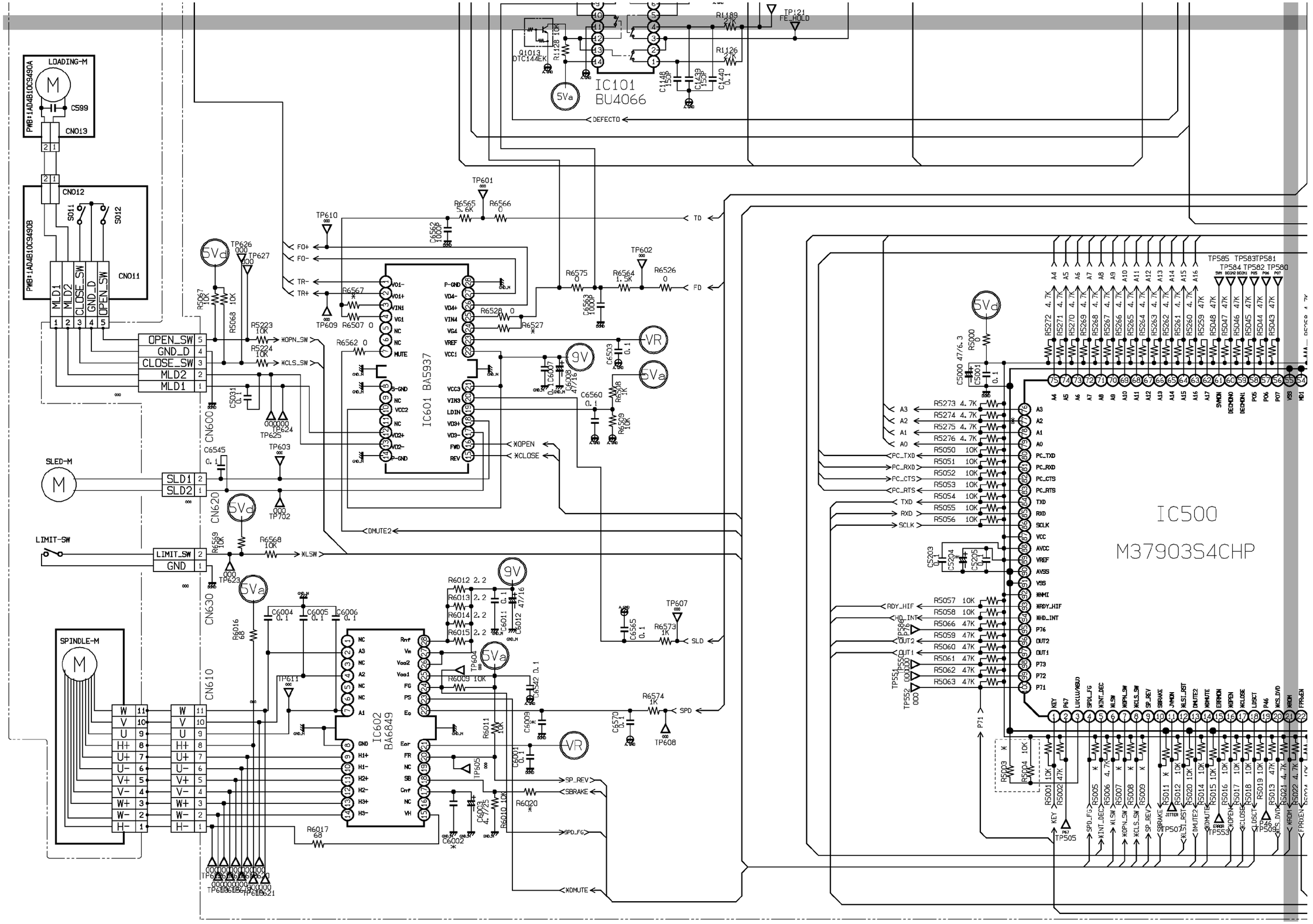
7-3

SCHEMATIC DIAGRAM (TOP RIGHT) - SERVO BOARD



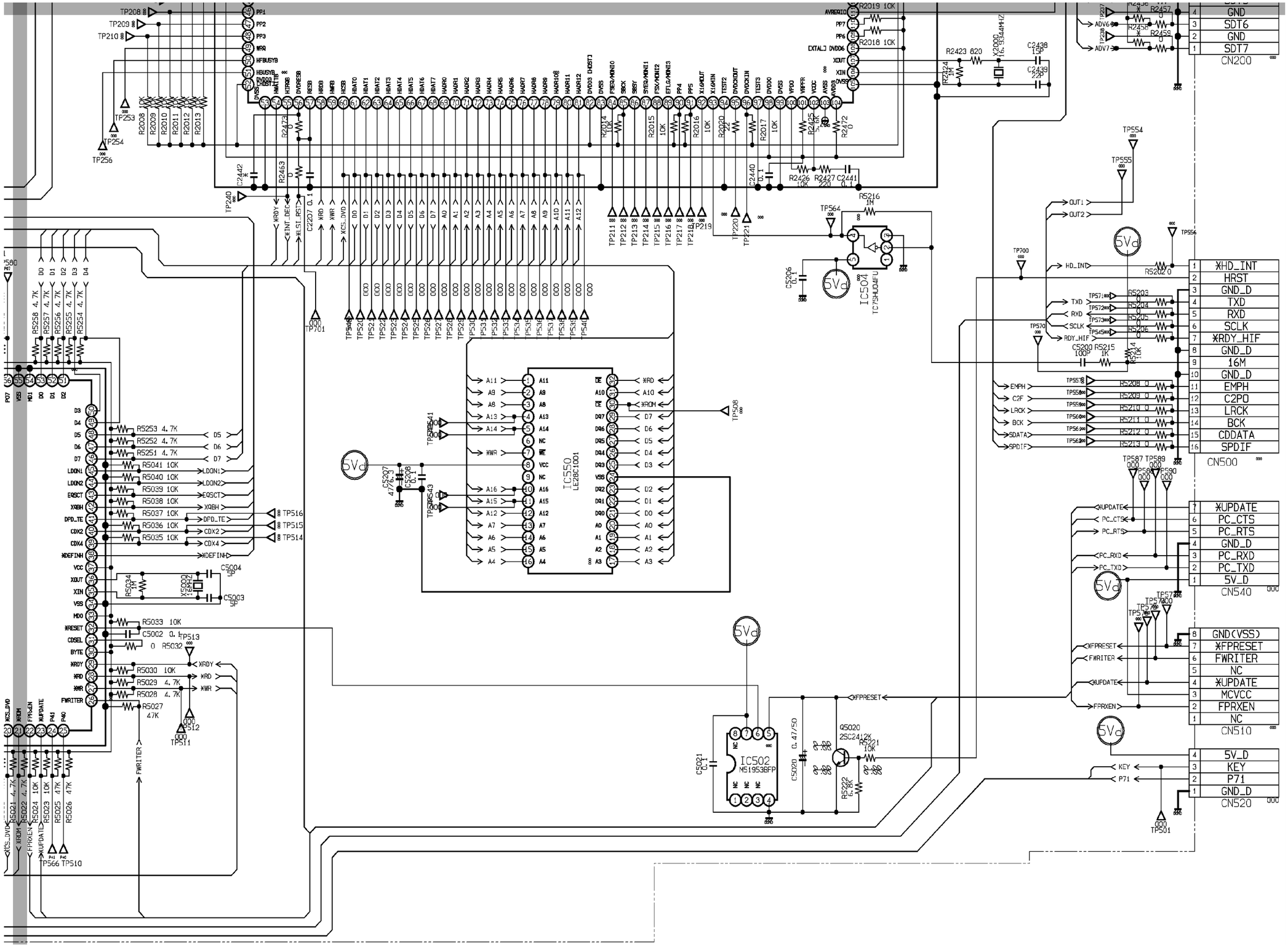
7-4

SCHEMATIC DIAGRAM (BOTTOM LEFT) - SERVO BOARD

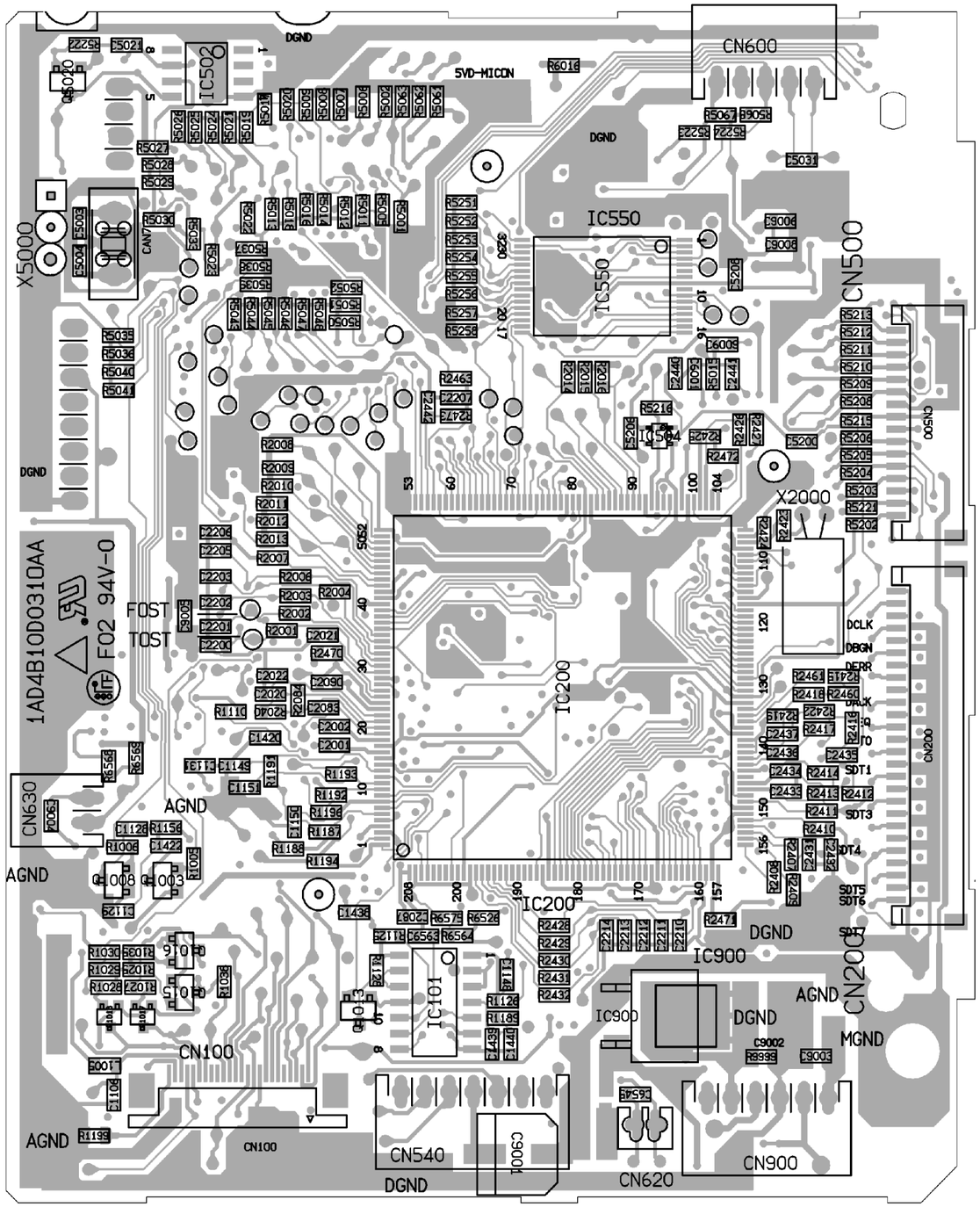


7-5

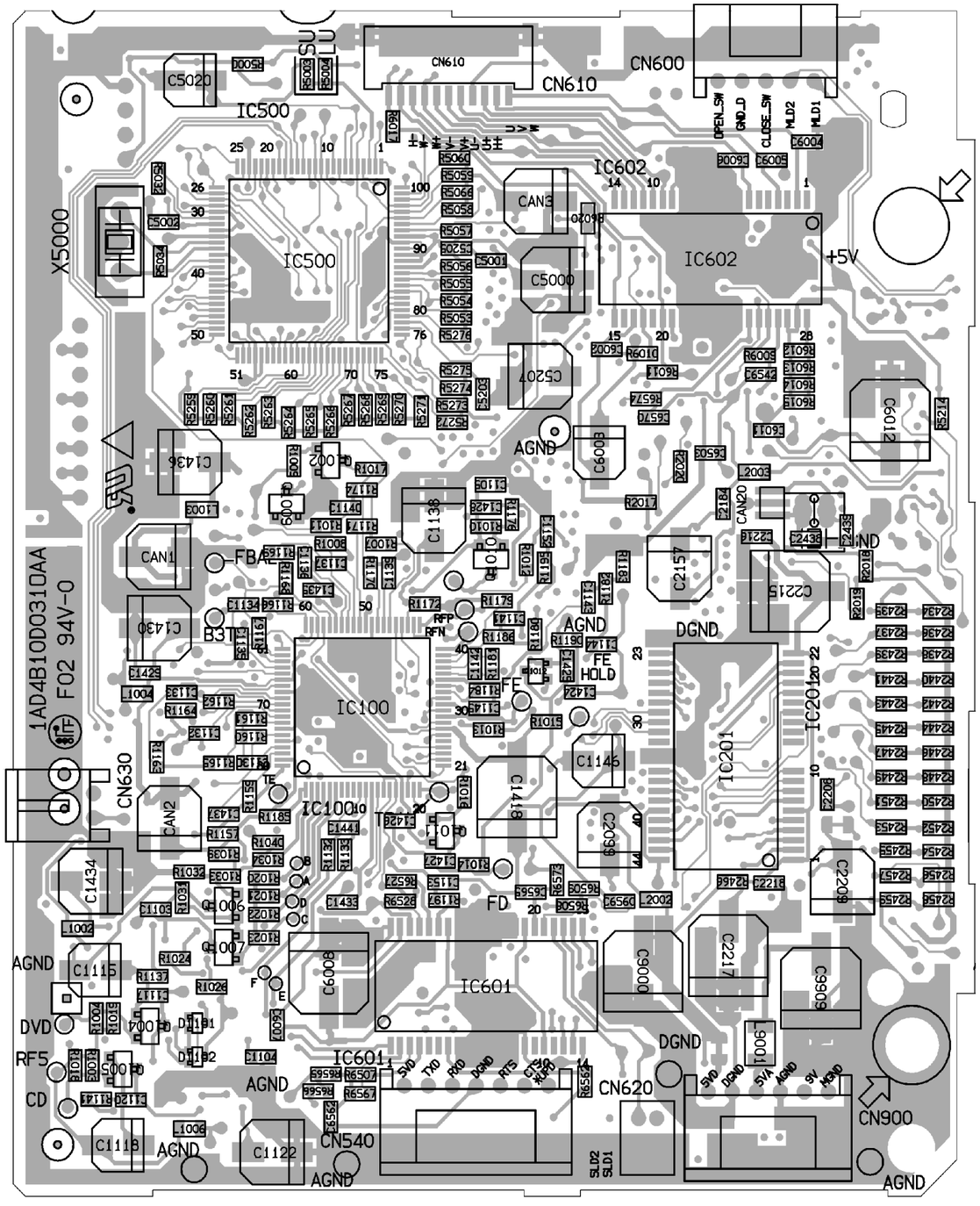
SCHEMATIC DIAGRAM (BOTTOM RIGHT) - SERVO BOARD



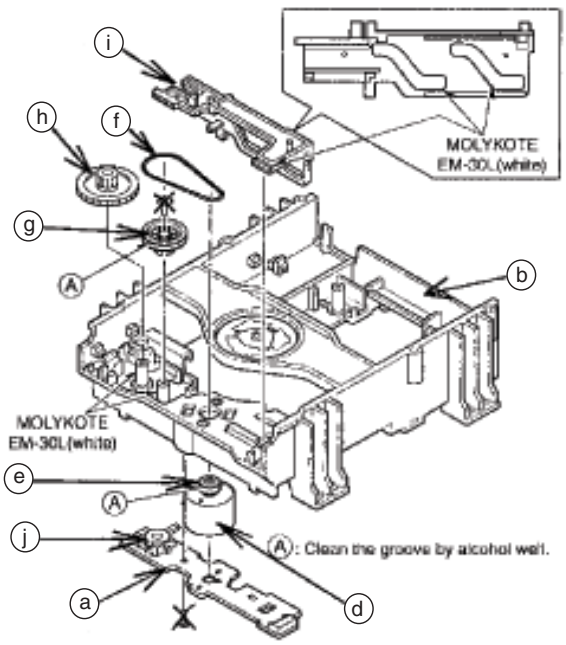
LAYOUT DIAGRAM (DVD SIDE A)

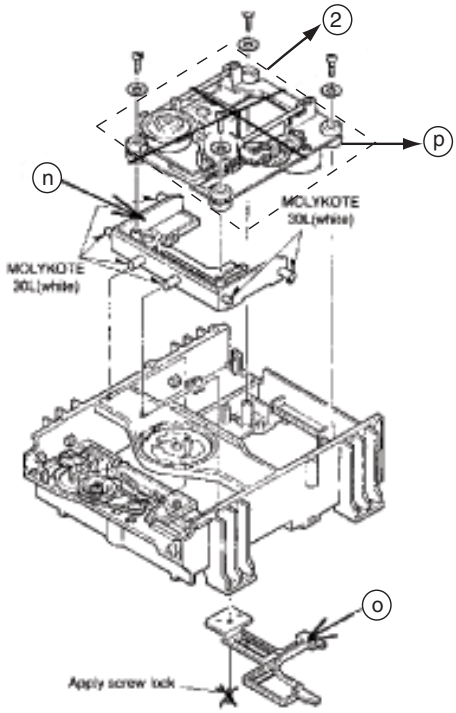


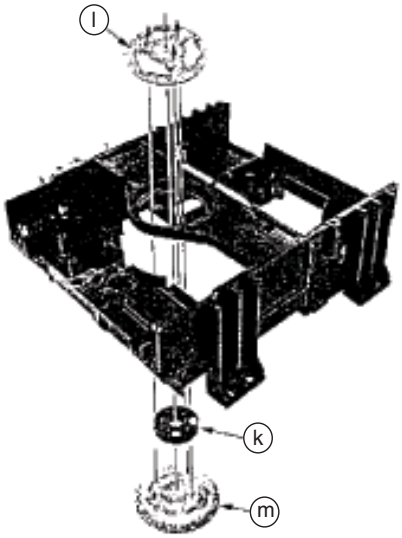
LAYOUT DIAGRAM (DVD SIDE B)



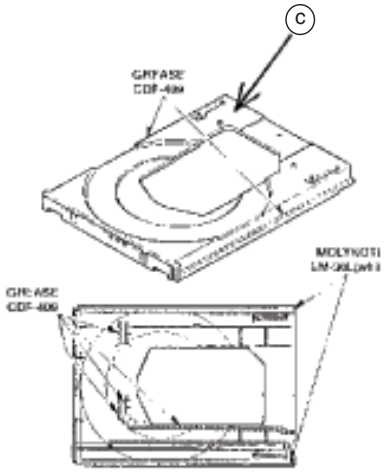
Exploded View - DVD Loader

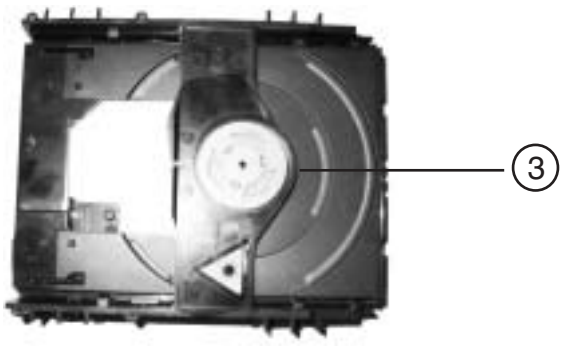






Tray parts.





Without DVD Drive

MECHANICAL / ELECTRICAL PARTS LIST - DVD MODULE

1	9965 000 13082	SERVO PC BOARD ASSEMBLY
2	9965 000 13083	DVD DRIVE MECHANISM
3	9965 000 13084	LOADER MECHANISM *(without Servo Board and DVD Drive mechanism)*
c	9965 000 13085	TRAY
f	9965 000 13086	BELT
j	9965 000 13087	SWITCH LEVER
p	9965 000 13088	SPACER MECHA (SUSPENSION)
d+e	9965 000 13089	MOTOR W/PULLEY ASSEMBLY
	9965 000 12822	COMPLETE DVD MODULE *(with Servo Board and DVD Drive mechanism)*
	9965 000 16344	FLEX CABLE 24PIN 24CM *(for connection between DVD's OPU and Servo Board)*

Note: Only the parts mentioned in this list are normal service spare parts.

DVD LOADER KIT772SI

It is not recommended for component repair on this Module but to replace the major assembly when it becomes defective. Therefore limited service parts list are published in this chapter.

The Circuit & Layout diagrams are published for reference only. The repair assistance on DVD section is given on Chapter 2.

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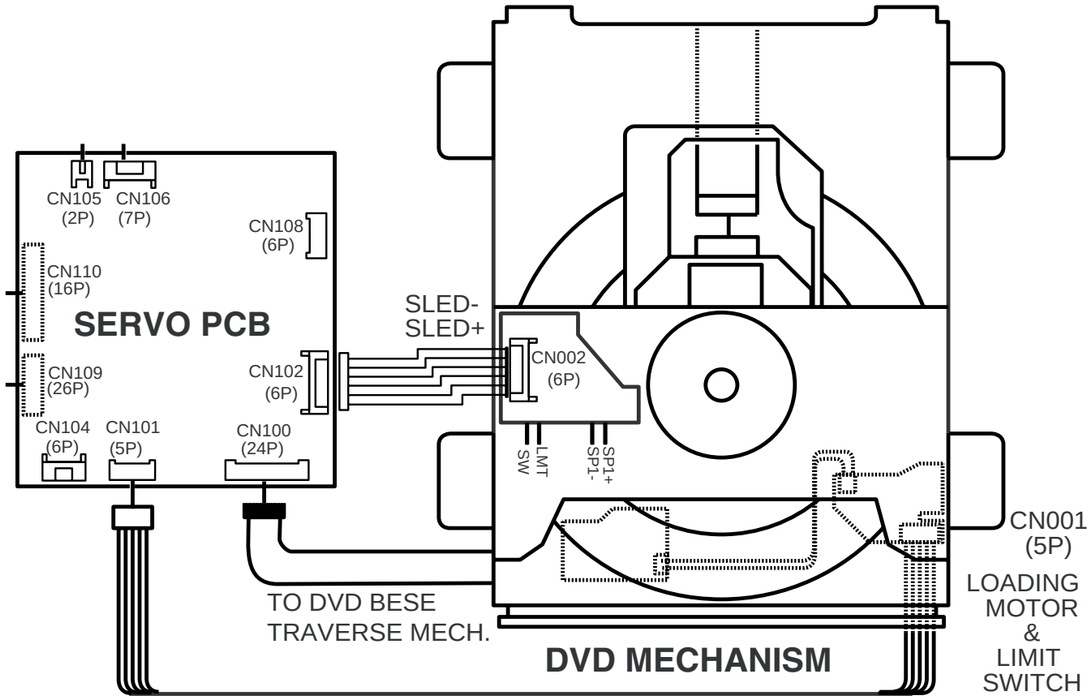
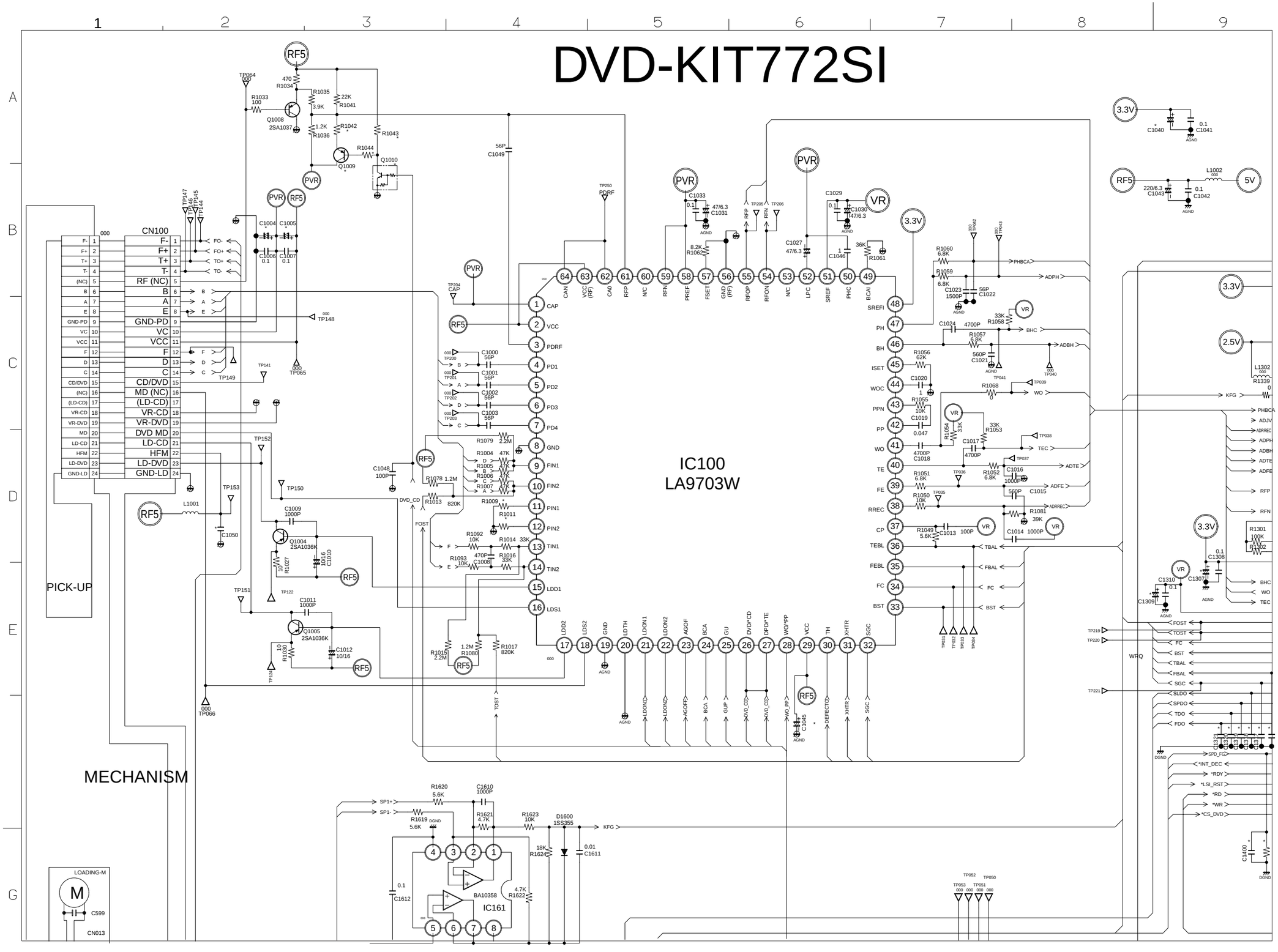
7A-1

WIRING CONNECTION



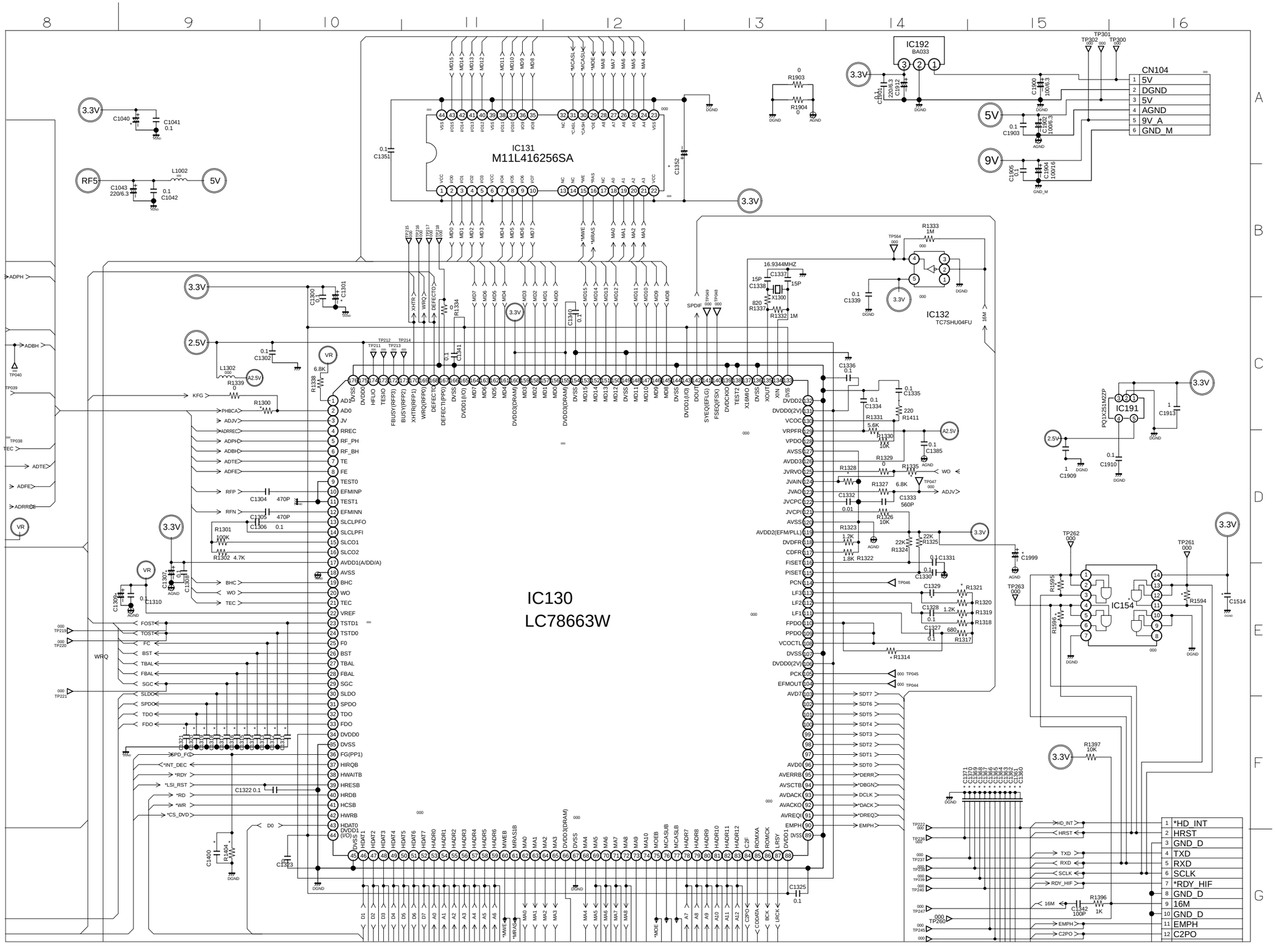
7A-2

SCHEMATIC DIAGRAM (TOP LEFT) - SERVO BOARD



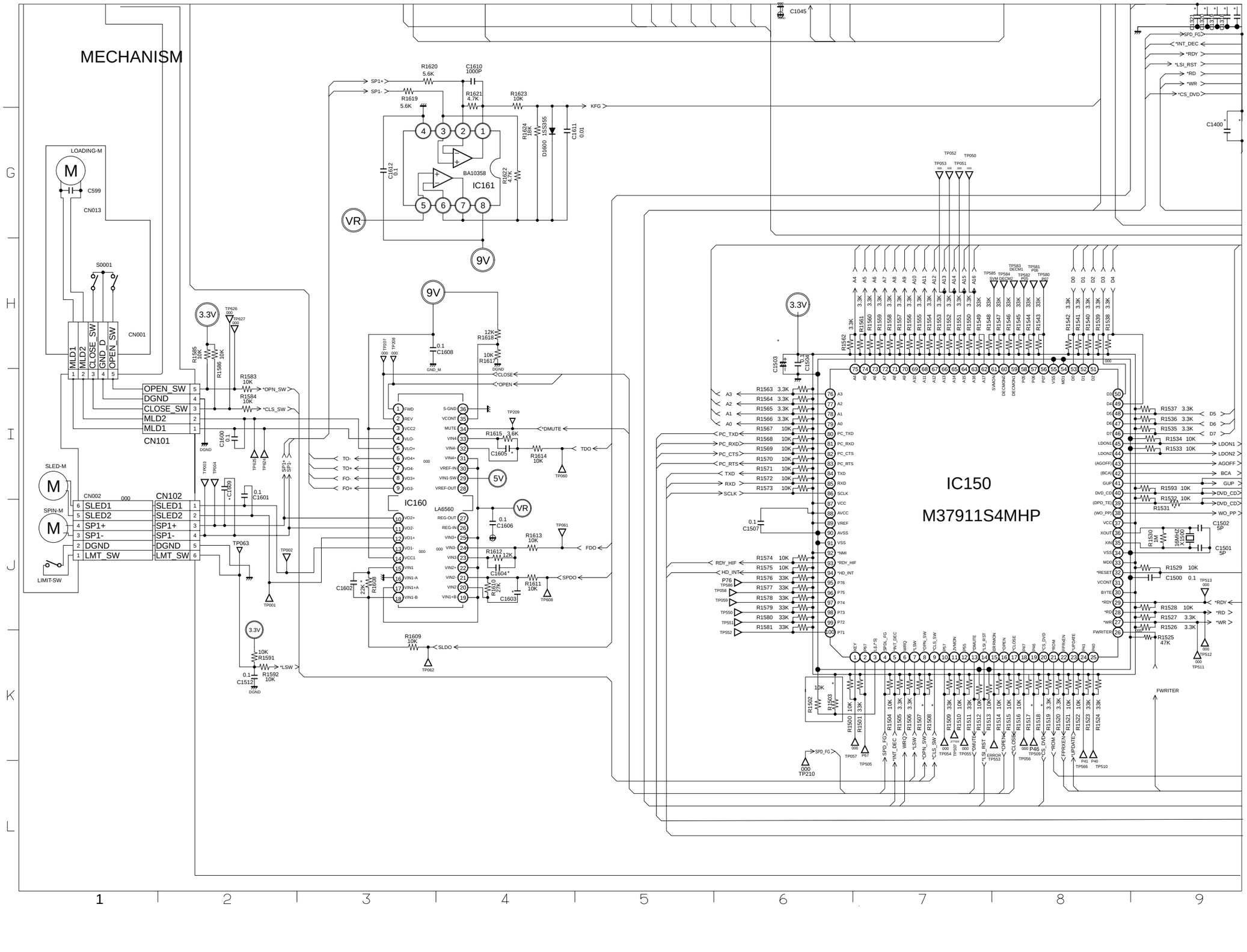
7A-3

SCHEMATIC DIAGRAM (TOP RIGHT) - SERVO BOARD



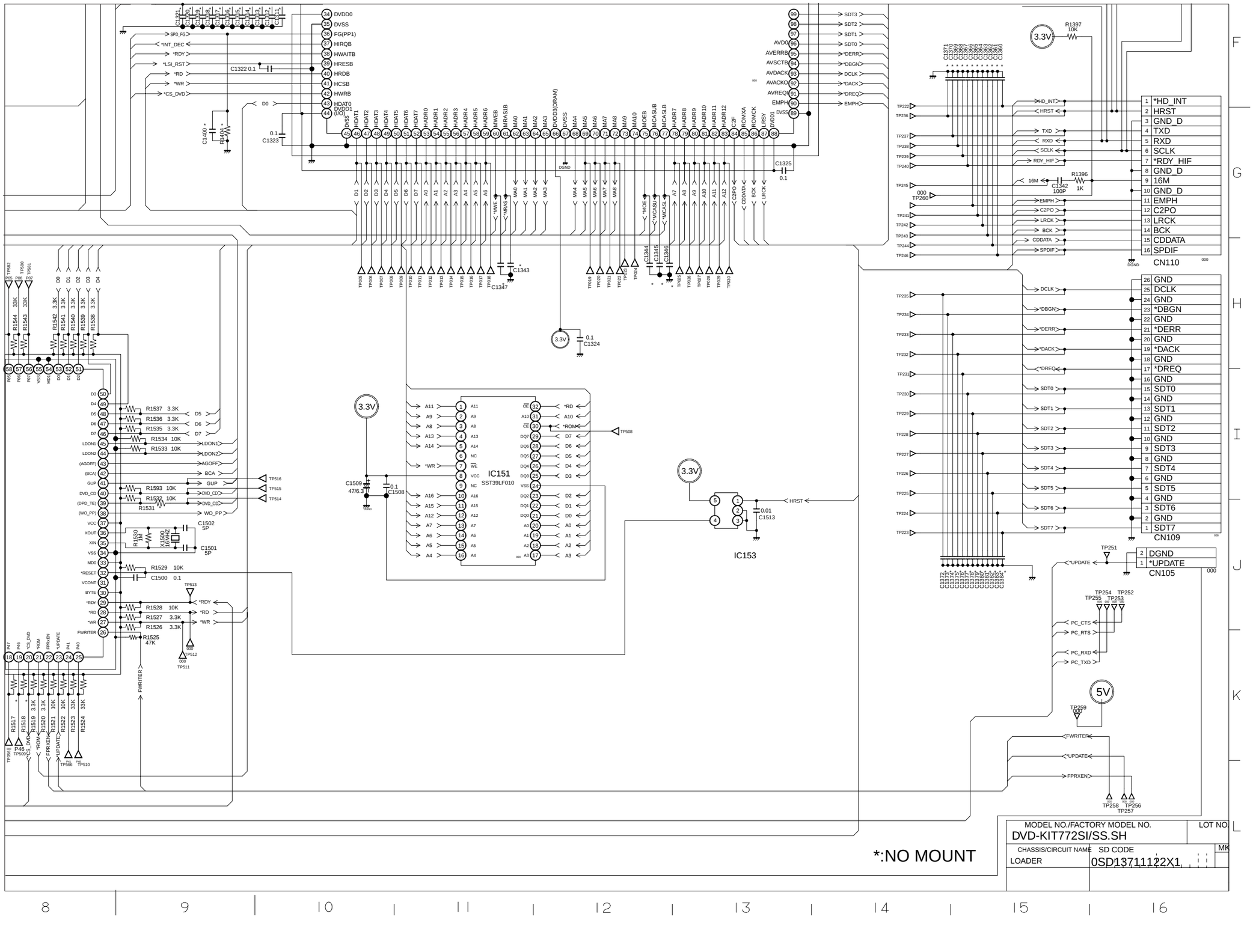
7A-4

SCHEMATIC DIAGRAM (BOTTOM LEFT) - SERVO BOARD

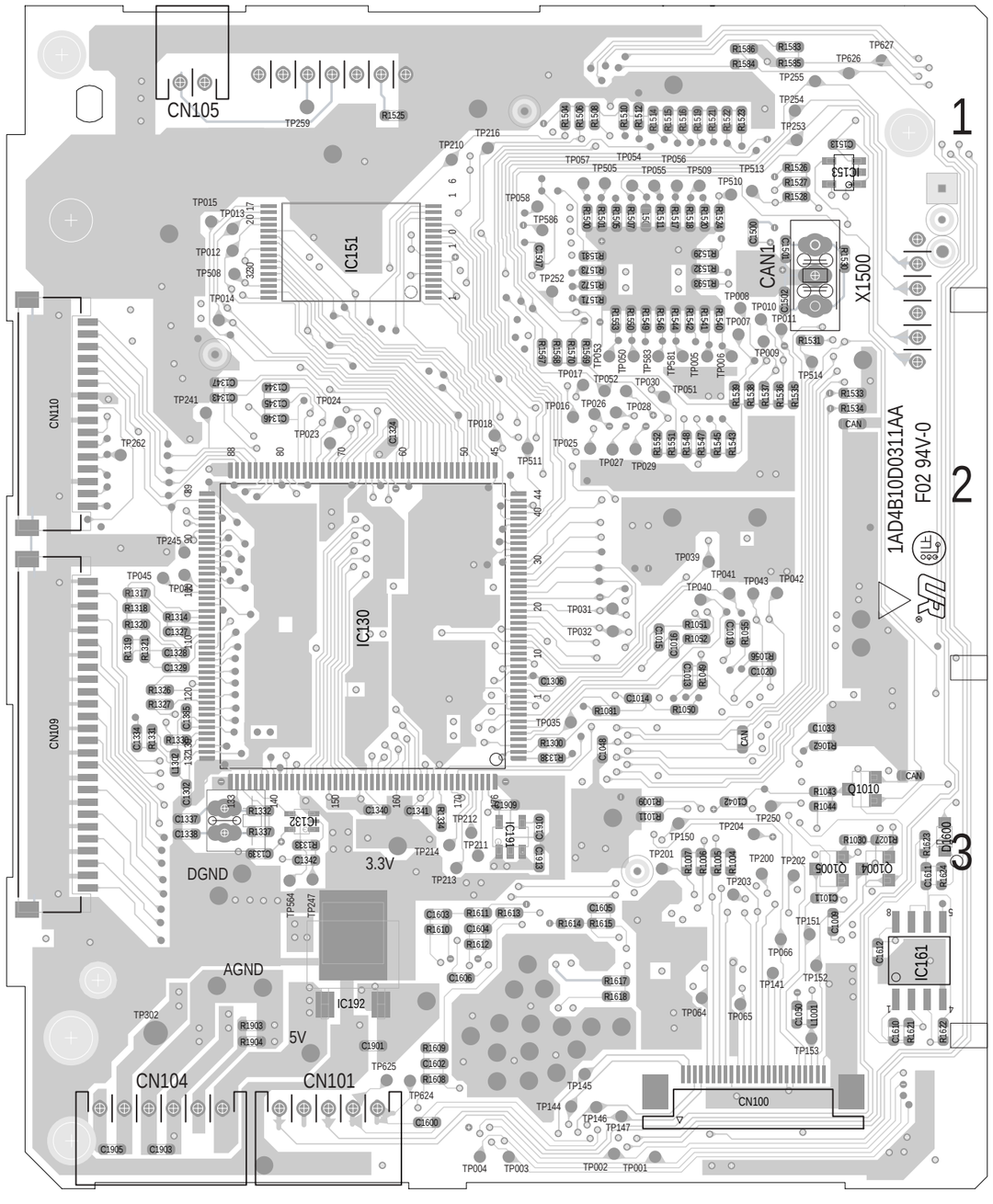


7A-5

SCHEMATIC DIAGRAM (BOTTOM RIGHT) - SERVO BOARD

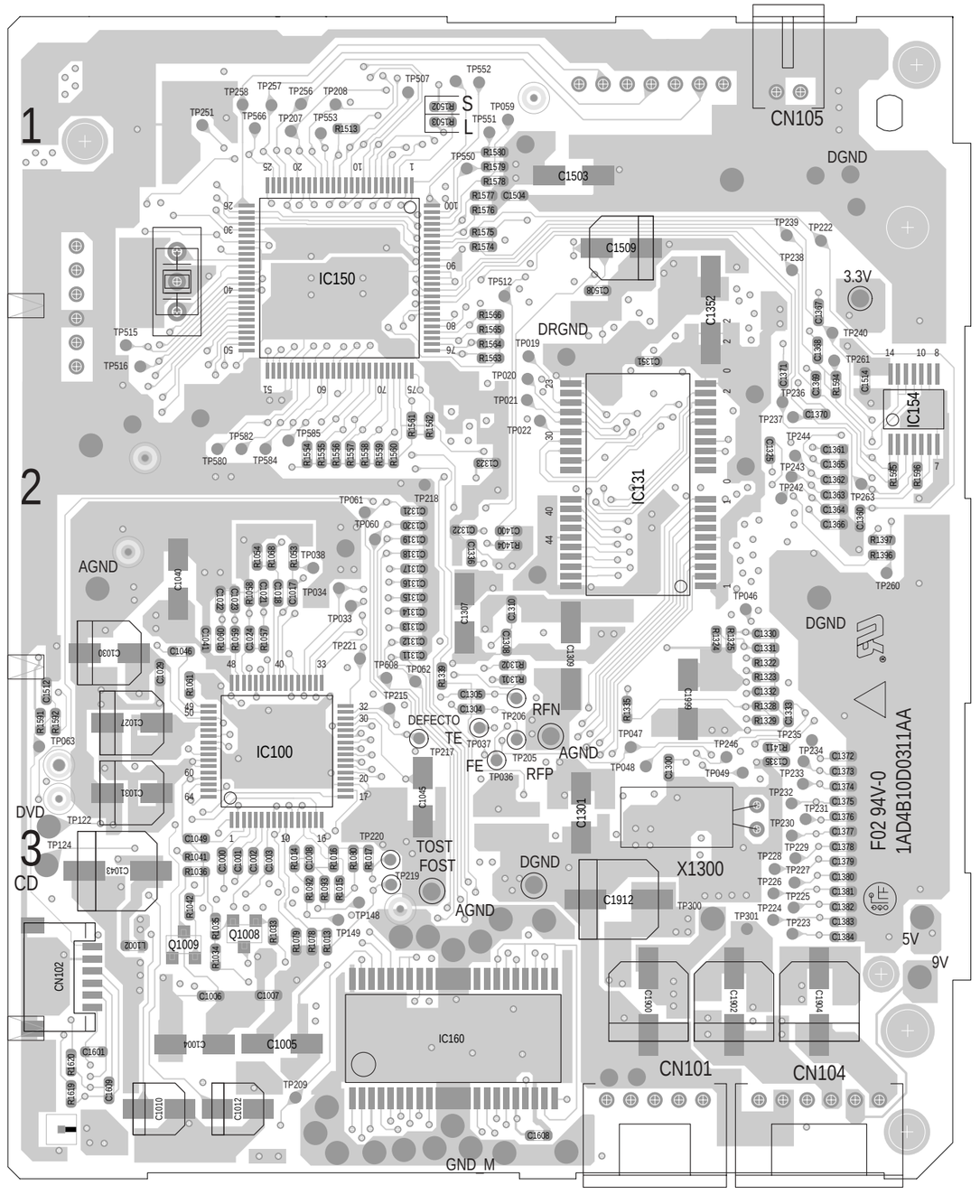


LAYOUT DIAGRAM (DVD SIDE A)

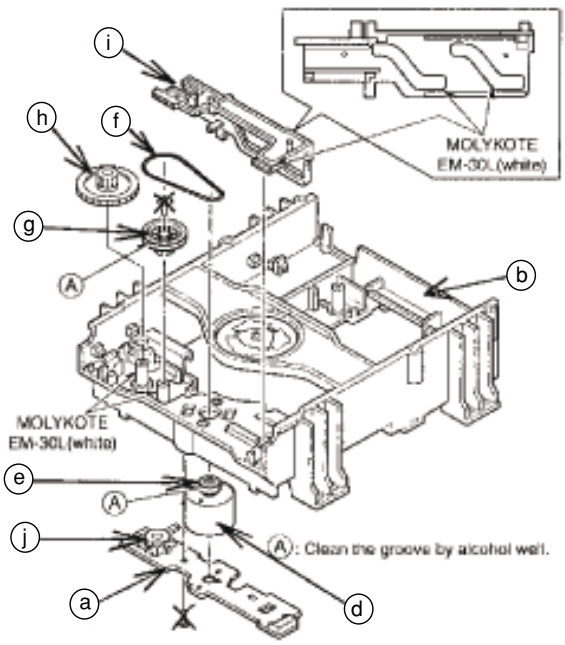


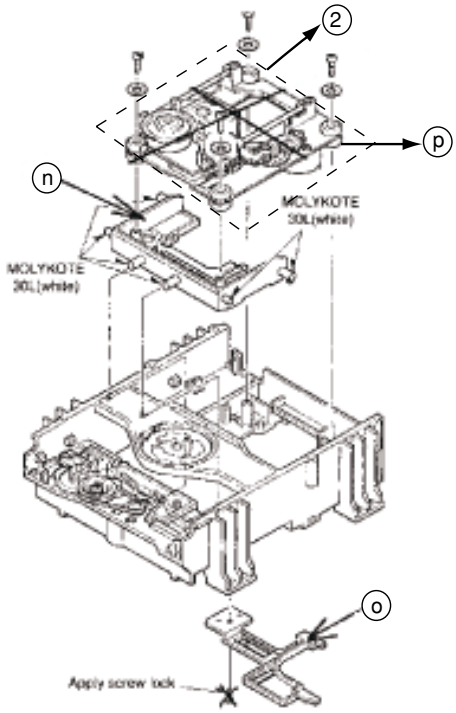
7A-6

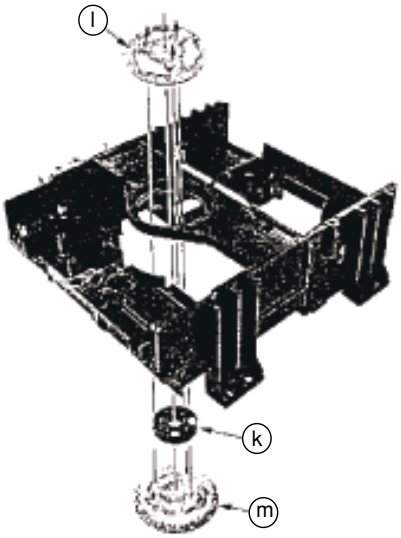
LAYOUT DIAGRAM (DVD SIDE B)



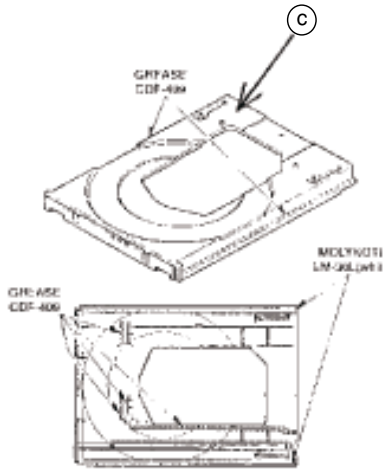
Exploded View - DVD Loader

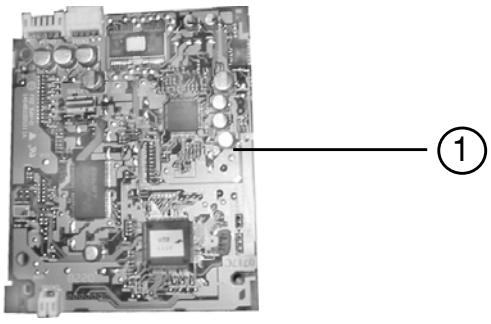


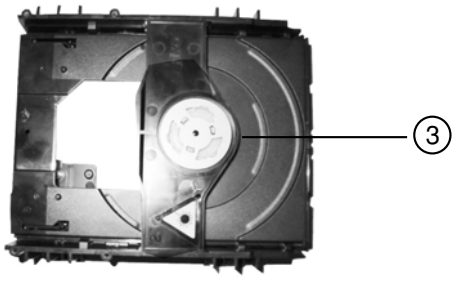




Tray parts.







Without DVD Drive

MECHANICAL / ELECTRICAL PARTS LIST - DVD MODULE

1	9965 000 16291	SERVO PC BOARD ASSEMBLY
2	9965 000 16292	DVD DRIVE MECHANISM
3	9965 000 16293	LOADER MECHANISM *(without Servo Board and DVD Drive mechanism)*
c	9965 000 13085	TRAY
f	9965 000 13086	BELT
j	9965 000 13087	SWITCH LEVER
p	9965 000 13088	SPACER MECHA (SUSPENSION)
d+e	9965 000 13089	MOTOR W/PULLEY ASSEMBLY
	9965 000 15489	Complete DVD MODULE KIT772SI *(with Servo Board and DVD Drive mechanism)*
	9965 000 16344	FLEX CABLE 24PIN 24CM *(for connection from DVD's OPU to Servo Board)*
	9965 000 16345	FLEX CABLE 6PIN 15CM *(for connection from DVD's small pcb to Servo Board)*

Note: Only the parts mentioned in this list are normal service spare parts.

MAIN BOARD

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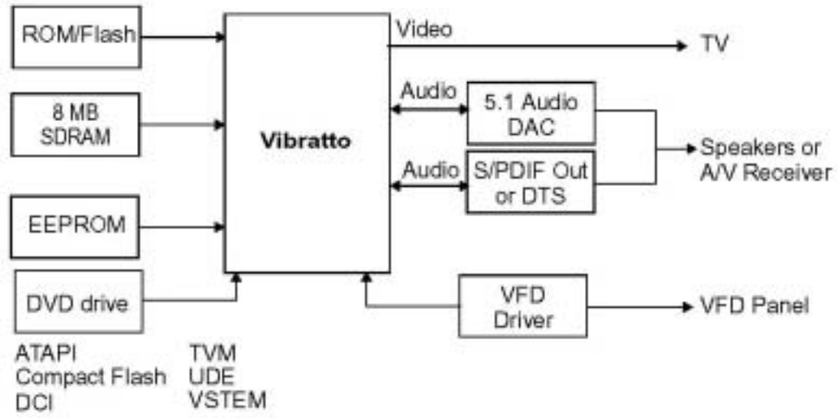
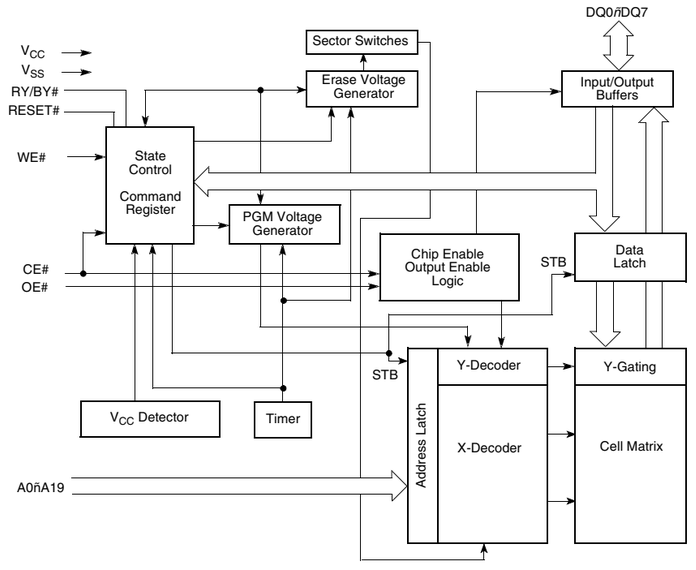
8-1

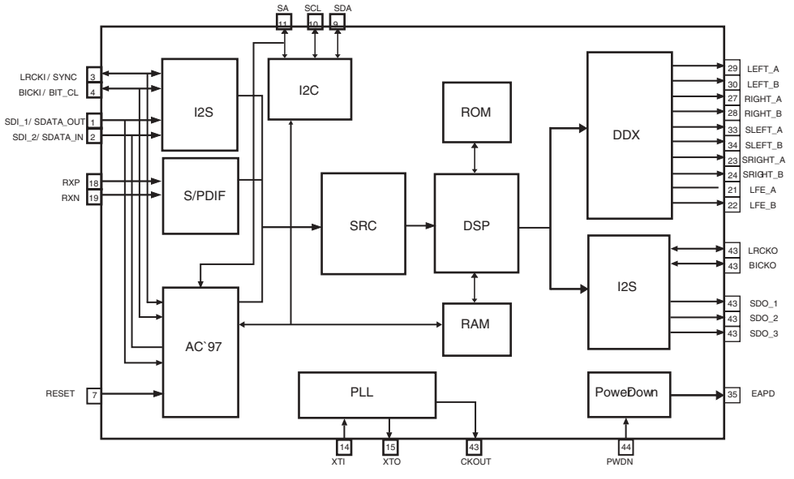
6018/6028 INTERNAL IC DIAGRAM



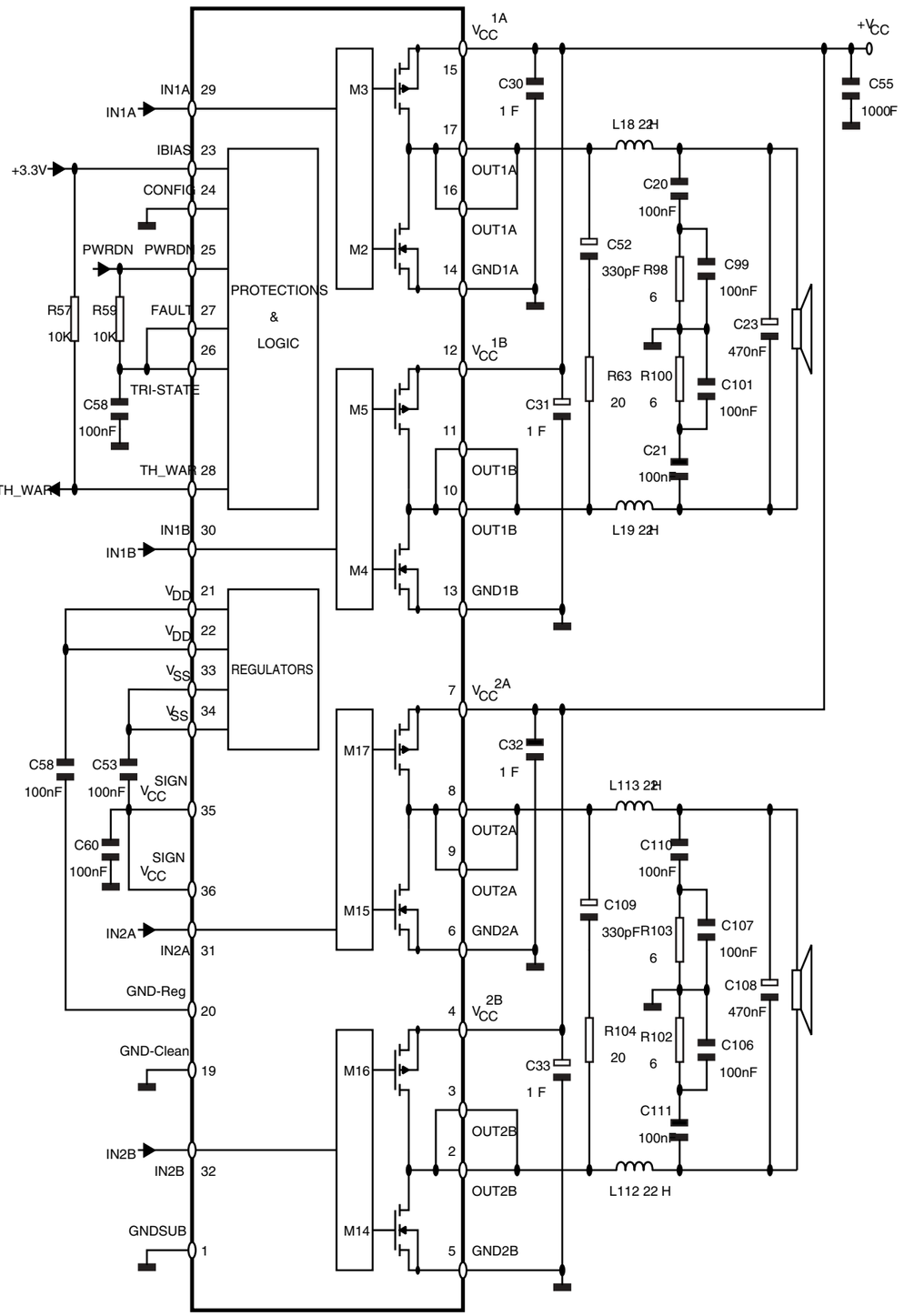
AM29F080B INTERNAL IC DIAGRAM



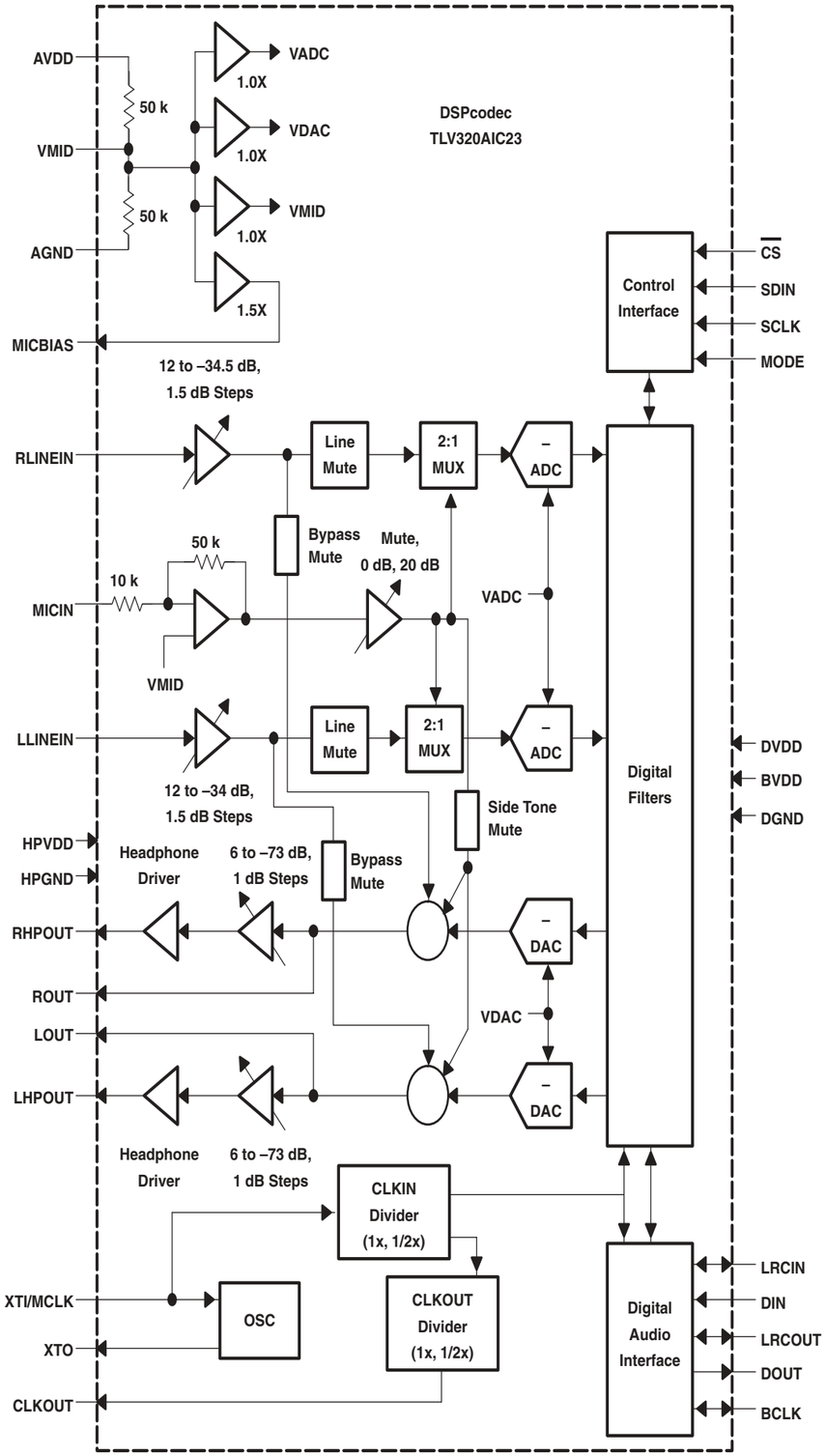
STA304A INTERNAL IC DIAGRAM



STA505 AUDIO APPLICATION CIRCUIT



TLV320A INTERNAL IC DIAGRAM



8-3

VOLTAGES

IC100 (AM29F)

PIN No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Voltage	1.2	2.1	0	0	1.8	0	1.3	1.7	3.3	5.1	0	5.1	0	1.9	0	1.5	1.5	1.8	1.6	1.6
PIN No.	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Voltage	1.4	2.1	0	0	1.9	1.7	1.4	2.1	0	0	5	1.3	1.6	0.6	0.8	0	3.2	3.3	0	0

IC102 (74HC3740)

PIN No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Voltage	0	5.1	1.5	1.1	5	5	1.2	1.9	5	0	3.3	5	0	0.9	5	5	0.6	0	5.1	5

IC103 (ES6018)

PIN No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Voltage	3.3	1.7	1.6	1.7	1.5	1.6	2	0	2.6	2	2	1.7	1.4	1.4	1.9	1.1	0	3.4	1.6	2.1
PIN No.	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Voltage	1.2	0.4	0.4	5	0	0	3.4	1.6	1.1	1.7	0.7	1.7	1.1	0	2.6	1.2	1.1	1.5	1.7	1.7
PIN No.	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
Voltage	1.7	0	0	2.6	0.2	0.2	0.2	0	2.1	1.5	3.4	0	0.1	0.6	0.6	1.5	1.5	1.6	3.4	0
PIN No.	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
Voltage	1.5	1.5	1.5	0	0.2	0.2	0	3.4	3.3	3.4	0	3.3	0.2	0	3.3	0	1.2	1.2	1.5	1.4
PIN No.	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
Voltage	1.4	1.3	2.5	0	1.3	1.2	0	1.3	1.4	1.2	0	3.4	0.1	0.1	1.5	1.4	0	0	3.4	3.1
PIN No.	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120
Voltage	0	1.3	0	3.4	1.4	1	1.3	1.3	1.9	1.2	3.3	0	0.9	0.5	0	0.5	0.2	0.3	0.4	0
PIN No.	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140
Voltage	2.6	0	0	0	3.3	0	3.3	0	0	3.4	3.4	3.3	0	0	3.4	0.1	0	0	2.6	0
PIN No.	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160
Voltage	0	3.3	3.3	3.3	3.3	1.2	0	3.4	0	3.3	0	0.2	0.2	0.2	0.3	0	3.4	0.1	3.3	4.1
PIN No.	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180
Voltage	5.1	1	3.3	5.1	3	5.1	5	5.1	5.1	3.3	0	2.6	3.3	3.3	3.3	3.3	0	2.3	1.3	1.9
PIN No.	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200
Voltage	1.4	1.2	3.4	0	0.9	0.5	0.6	1	1.4	1.2	1.3	1.4	0	3.4	0.9	1.1	1.1	3.3	3.3	0
PIN No.	201	212	203	204	205	206	207	208												
Voltage	2.3	1.1	1.1	1.1	0.2	2.1	1.3	0												

IC104 (74HC3740)

PIN No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Voltage	0	5.1	1.4	1.3	0	0	0	1.5	5	0	3.3	5.1	0.9	1.1	0	5.1	1	1.3	0	5

IC105 (AT24C02)

PIN No.	1	2	3	4	5	6	7	8												
Voltage	0	0	0	0	4.1	0	0	5.1												

IC106 (4X16Y3VTW)

PIN No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Voltage	3.4	1.1	3.4	1.2	1.4	0	1.3	1.2	3.4	1.2	1.2	0	1.2	3.4	0.1	3.1	3.1	3.1	2.9	0.2
PIN No.	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Voltage	0.1	0.2	0.1	0.6	0.6	1.5	3.4	0	1.6	1.8	1.6	1.4	1.2	0	0.2	0.2	3.4	1.4	0.1	0
PIN No.	41	42	43	44	45	46	47	48	49	50	51	52	53	54						
Voltage	0	1.2	3.4	1.2	1.2	0	1.2	1	1.6	3.4	1.6	0	1.6	0						

IC400 (TC4052BP)

PIN No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16				
Voltage	0	0	0	0	0	0	0	5.1	5.1	0	0	0	0	0	0	5.1				

IC401 (4558)

PIN No.	1	2	3	4	5	6	7	8												
Voltage	0	0	0	-5.2	0	0	0	5.1												

IC402 (TLV320A)

PIN No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Voltage	3.4	1.6	1.7	1.1	1.7	1.4	1.7	3.4	1.7	1.7	0	0	1.7	3.4	0	1.7	0	0.1	1.7	1.7
PIN No.	21	22	23	24	25	26	27	28												
Voltage	0	0	3	3.5	1.6	0.4	3.4	0												

IC500 (F4LVT126)

PIN No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14						
Voltage	0	1.4	1.2	0	0	1.2	0	3.5	5.1	3.5	0	0	0	3.5						

IC501 (F4LVT125)

PIN NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14						
Voltage	0	1.1	1.21	0	1.1	1.1	0	1.7	1.7	0	1.7	1.7	0	3.5						

IC502 (STA304A)

PIN No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Voltage	1.1	1.1	1.7	1.7	1.7	0	3.5	0	4.1	3.5	0	0	3.5	1.6	1.6	0	3.5	0	0	0

IC502 (STA304A)

PIN No.	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Voltage	0.2	0.2	0.2	0.2	0	3.5	0.2	0.2	0.2	0.2	0	3.5	0.2	1.2	0	1.7	1.4	1.4	0	0
PIN No.	41	42	43	44																
Voltage	0	0	0	0																

IC503 (STA505)

PIN No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Voltage	0	2.2	2.2	30.5	0	0	30.5	2.2	2.2	2.2	2.2	30.5	0	0	30.5	2.2	2.2	0	0	0
PIN No.	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36				
Voltage	4.8	4.8	3.5	0	3.5	3.5	3.5	3.5	0.2	0.2	0.2	0.2	25.3	25.3	30.5	30.5				

IC504 (STA505)

PIN No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Voltage	0	2.2	2.2	30.5	0	0	30.5	2.2	2.2	2.2	2.2	30.5	0	0	30.5	2.2	2.2	0	0	0
PIN No.	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36				
Voltage	4.8	4.8	3.5	0	3.5	3.5	3.5	3.5	0.2	0.2	0.2	0.2	25.3	25.3	30.5	30.5				

IC505 (STA304A)

PIN No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Voltage	1.2	0	1.7	1.7	3.5	0	3.5	0	3	3.5	0	0	3.4	1.6	1.8	0	3.5	0.9	0.9	0
PIN No.	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Voltage	0.2	0	0	0	0	0	0	0.2	0.3	0.3	0	3.5	0	0	0	0	0	0	0	0
PIN No.	41	42	43	44																
Voltage	0	3.5	1.9	3.5																

IC506 (STA505)

PIN No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Voltage	0	2.2	2.2	30.5	0	0	30.5	2.2	2.2	2.2	2.2	30.5	0	0	30.5	2.2	2.2	0	0	0
PIN No.	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36				
Voltage	4.8	4.8	3.5	0	3.5	3.5	3.5	3.5	0.2	0.2	0.2	0.2	25.3	25.3	30.5	30.5				

IC900 (BA05T)

PIN No.	1	2	3	
Voltage	6.3	0	5.1	

IC901 (BA05T)

PIN No.	1	2	3	
Voltage	6.2	0	5.1	

Q101 (23C2001L)

PIN No.	1	2	3	
Voltage	3.3	3.3	2.6	

Q102 (2SX945P)

PIN No.	1	2	3	
Voltage	0	7.7	0	

Q400 (2SC945P)

PIN No.	1	2	3	
Voltage	1.8	5.1	1.4	

Q401 (2SC2878-A)

PIN No.	1	2	3	
Voltage	0.7	0	0	

Q402 (2SC2878-A)

PIN No.	1	2	3	
Voltage	0.7	0	0	

Q403 (2SC2878-A)

PIN No	1	2	3	
Voltage	0.7	0	0	

Q404 (2SA733QP)

PIN No	1	2	3	
Voltage	3.7	4.4	3.7	

Q900 (2SC945P)

PIN No	1	2	3	
Voltage	0	5	0	

Q903 (2SA733QP)

PIN No	1	2	3	
Voltage	5	2	5.1	

Q904 (2SS945P)

PIN No	1	2	3	
Voltage	0	11.2	0	

Q905 (2SA733QP)

PIN No	1	2	3	
Voltage	11.2	0.1	11.2	

Q906 (2SC945P)

PIN No	1	2	3	
Voltage	0.7	0	0	

Q907 (2SB772P/Q

PIN No.	1	2	3	
Voltage	11.2	11.2	10.5	

Q907 (B772-P)

PIN No.	1	2	3	
Voltage	11.3	11.2	10.5	

Q908 (2SC945P)

PIN No.	1	2		
Voltage	0.7	0	0	

Q909 (2SB772P/Q

PIN No.	1	2	3	
Voltage	6.1	6	5.3	

Q909 (B772-P)

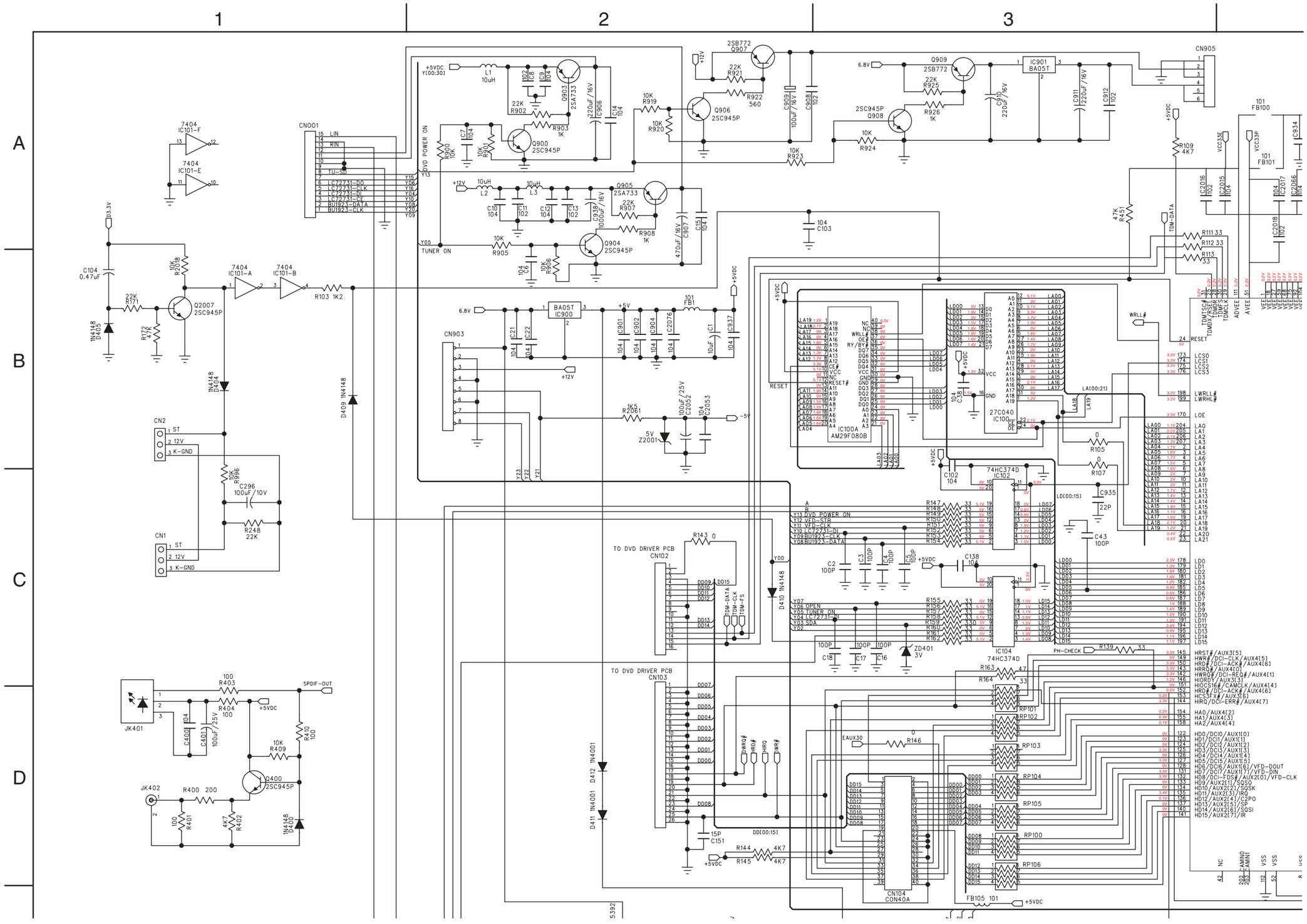
PIN No.	1	2	3	
Voltage	6.3	6.2	5.6	

Q2007 (2SC945P)

PIN No.	1	2	3	
Voltage	0	3.4	0	

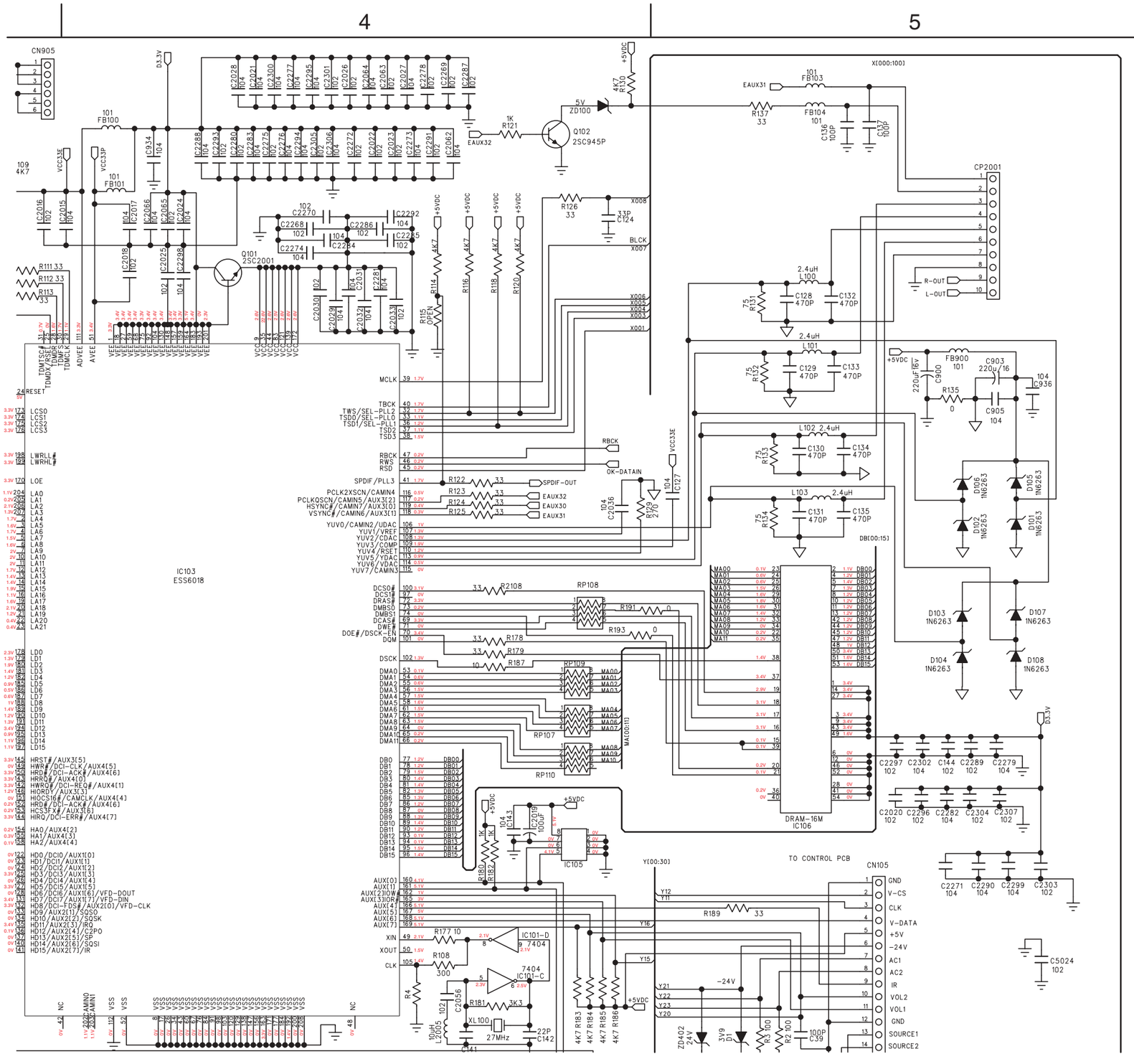
8-4

CIRCUIT DIAGRAM (TOP LEFT)



8-5

CIRCUIT DIAGRAM (TOP RIGHT)



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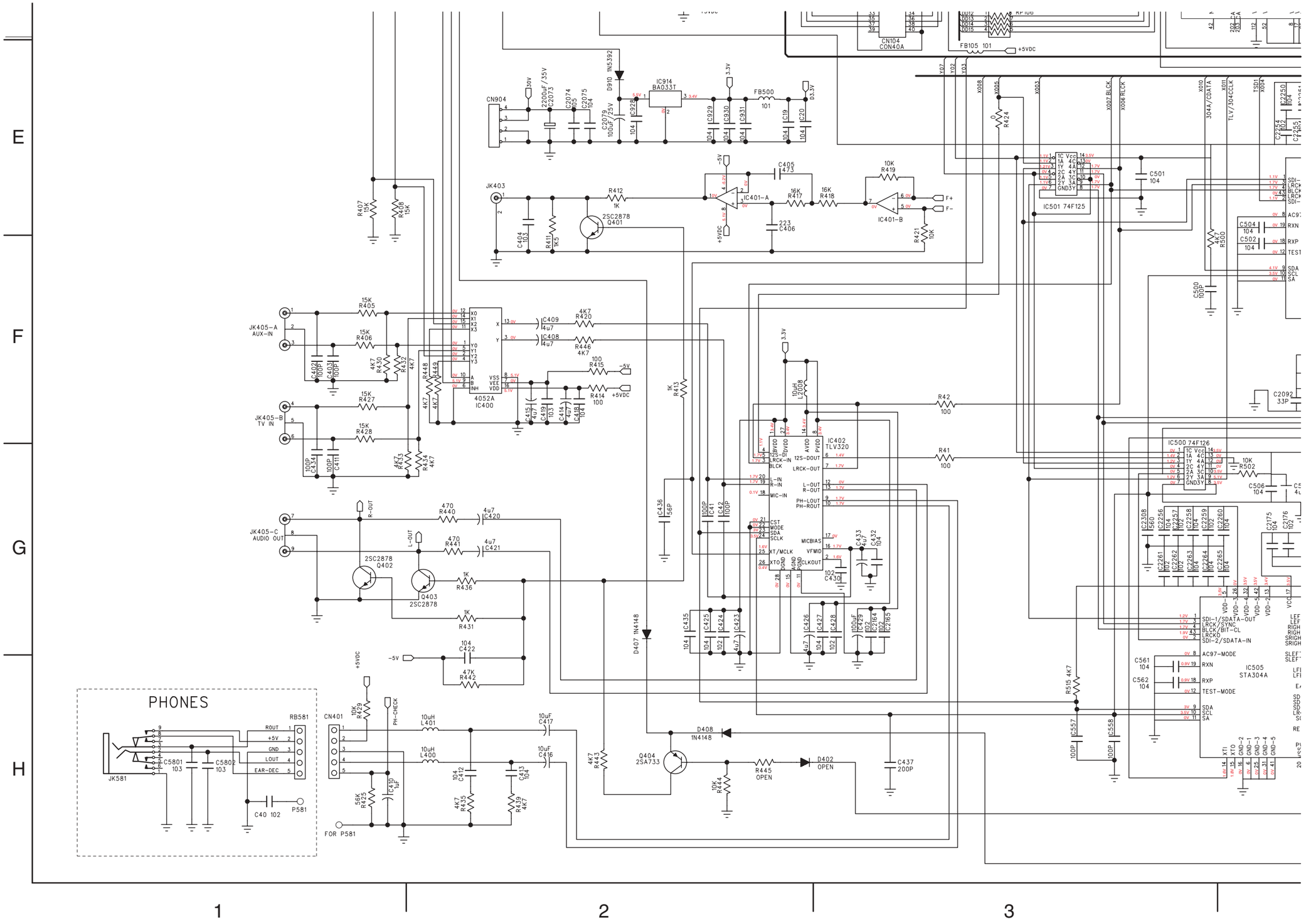
CN2	B1	L501	E5	R155	C3	R514	G5
CN102	C2	L502	F5	R156	C3	R515	H3
CN103	D2	L503	F5	R157	C3	R516	H4
CN105	D5	L504	H5	R158	C3	R517	H4
CN401	H1	L507	E5	R159	C3	R518	G4
CN903	B2	L508	F5	R160	C3	R519	G5
CN904	E2	L509	G5	R161	C3	R520	F5
CN905	A3	L513	H5	R162	C3	R521	H5
CP2001	A5	L514	H5	R163	C3	R522	G5
D1	D5	L515	F5	R164	C3	R523	G5
D101	B5	L2005	D4	R171	B1	R524	H5
D102	B5	L2008	F2	R172	B1	R525	H5
D103	C5	L2009	E4	R177	D4	R526	H5
D104	C5	L2010	E4	R178	C4	R527	H5
D105	B5	L2032	F5	R179	C4	R528	H5
D106	B5	L2034	G5	R180	D4	R529	H5
D107	C5	L2036	G5	R181	D4	R530	H5
D108	C5	L2037	H5	R182	D4	R531	H5
D400	D1	L2038	G5	R183	D4	R532	H5
D404	B1	L2045	G5	R184	D4	R533	F4
D405	B1	Q101	A4	R185	D4	R534	F4
D407	G2	Q102	A4	R186	D4	R900	A2
D408	H2	Q400	D1	R187	C4	R901	A2
D409	B1	Q401	E2	R189	D5	R902	A2
D410	C2	Q402	G1	R191	C4	R903	A2
D411	D2	Q403	G2	R193	C4	R905	B2
D412	D2	Q404	H2	R248	C1	R906	B2
D910	E2	Q900	A2	R400	D1	R907	A2
FB1	B2	Q903	A2	R401	D1	R908	A2
FB100	A4	Q904	A2	R402	D1	R919	A2
FB101	A4	Q905	A2	R403	D1	R920	A2
FB103	A5	Q906	A2	R404	D1	R921	A2
FB104	A4	Q907	A2	R405	F1	R922	A2
FB500	E2	Q908	A3	R406	F1	R923	A2
FB502	G4	Q909	A3	R407	E1	R924	A3
FB503	G4	Q2007	B1	R409	D1	R925	A3
FB900	B5	R1	F4	R410	D1	R926	A3
IC100	B3	R2	D5	R411	E2	R996	C1
IC100A	B3	R3	D5	R412	E2	R2018	B1
IC101-A	B1	R4	D4	R413	F2	R2061	B2
IC101-B	B1	R41	G3	R414	F2	R2108	C4
IC101-C	D4	R42	F3	R415	F2	RB581	H1
IC101-D	D4	R103	B1	R417	E2	RP100	D3
IC101-E	A1	R105	B3	R418	E3	RP101	D3
IC101-F	A1	R107	C3	R419	E3	RP102	D3
IC102	C3	R108	D4	R420	F2	RP103	D3
IC103	C4	R109	A3	R421	E3	RP104	D3
IC104	C3	R111	A3	R424	E3	RP105	D3
IC105	D4	R112	A3	R425	H1	RP106	D3
IC106	D5	R113	B3	R427	F1	RP107	C4
IC400	F2	R114	A4	R428	F1	RP108	C4
IC401-A	E2	R115	B4	R429	G1	RP109	C4
IC401-B	E3	R116	A4	R430	F1	RP110	C4
IC402	G3	R118	A4	R431	G2	XL100	D4
IC500	G3	R120	A4	R432	F1	XL500	F4
IC501	E3	R121	A4	R433	G1	Z2001	B2
IC502	E4	R122	B4	R434	G2	ZD100	A4
IC503	H5	R123	B4	R435	H2	ZD401	C3
IC504	G5	R124	B4	R436	G2	ZD402	D5
IC505	H4	R125	B4	R439	H2		
IC506	E5	R126	A4	R440	G2		
IC900	B2	R129	B5	R441	G2		
IC901	A3	R130	A4	R442	H2		
IC914	E2	R131	B5	R443	H2		
JK401	D1	R132	B5	R444	H2		
JK402	D1	R133	B5	R446	F2		
JK403	E2	R134	B5	R448	F2		
JK405-A	F1	R135	B5	R449	F2		
JK405-B	F1	R137	A5	R500	F4		
JK405-C	G1	R139	C3	R501	F4		
JK500	F5	R143	C2	R502	G4		
JK581	H1	R144	D2	R503	E4		
L1	A2	R145	D2	R504	H4		
L2	A2	R146	D3	R505	E5		
L3	A2	R147	C3	R506	F5		
L100	A5	R148	C3	R507	H5		
L101	B5	R149	C3	R508	F5		
L102	B5	R150	C3	R509	H5		
L103	B5	R151	C3	R510	E5		
L400	H2	R152	C3	R511	E5		
L401	H2	R153	C3	R512	F5		

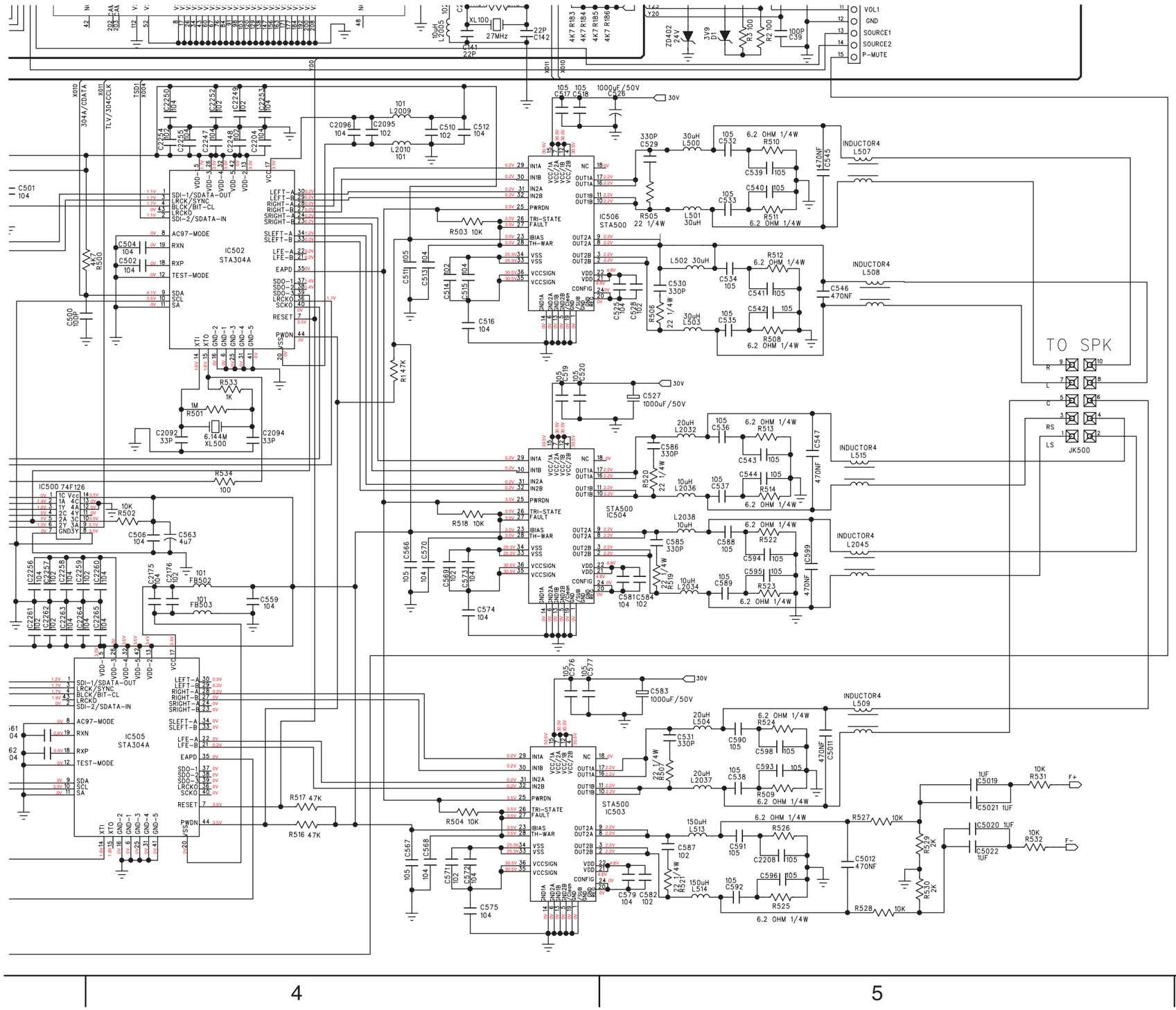
8-6

CIRCUIT DIAGRAM (BOTTOM LEFT)



8-7

CIRCUIT DIAGRAM (BOTTOM RIGHT)



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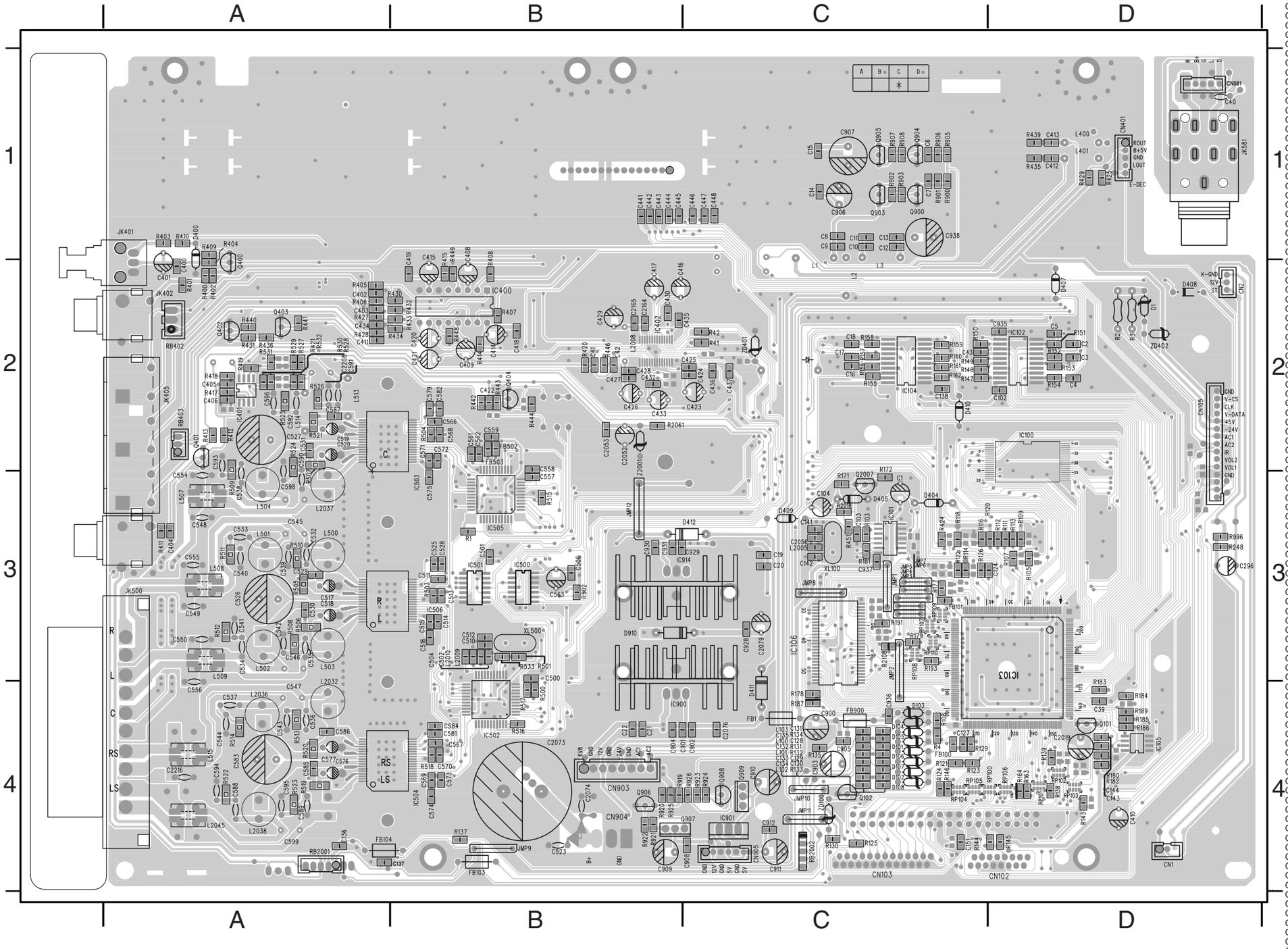
	C2	C3	C437	H3	C907	A2	C2278	A4
	C3	C3	C500	F3	C908	A2	C2279	C5
	C4	C3	C501	E3	C909	A2	C2280	A4
	C5	C3	C502	F4	C910	A3	C2281	A4
	C6	B2	C504	E4	C911	A3	C2282	D5
	C7	A2	C506	G4	C912	A3	C2283	A4
	C8	A2	C510	E4	C928	E2	C2284	A4
	C9	A2	C511	F4	C929	E2	C2285	A4
	C10	A2	C512	E4	C930	E2	C2286	A4
	C11	A2	C513	F4	C931	E2	C2287	A4
	C12	A2	C514	F4	C934	A4	C2288	A4
	C13	A2	C515	F4	C935	C3	C2289	C5
	C14	A2	C516	F4	C936	B5	C2290	D5
	C15	A2	C517	E4	C937	B2	C2291	A4
	C16	C3	C518	E4	C938	A2	C2292	A4
	C17	C3	C519	F4	C2015	A4	C2293	A4
E	C18	C3	C520	F4	C2016	A3	C2294	A4
	C19	E2	C525	F5	C2017	A4	C2295	A4
	C20	E2	C526	E5	C2018	A4	C2296	D5
	C21	B2	C527	F5	C2019	D4	C2297	C5
	C22	B2	C528	F5	C2020	D5	C2298	A4
	C38	B3	C529	E5	C2021	A4	C2299	D5
	C39	D5	C530	F5	C2022	A4	C2300	A4
	C40	H1	C531	H5	C2023	A4	C2301	A4
	C41	G2	C532	E5	C2024	A4	C2302	C5
	C42	G2	C533	E5	C2025	A4	C2303	D5
	C43	C3	C534	F5	C2026	A4	C2304	D5
	C102	B3	C535	F5	C2027	A4	C2305	A4
	C103	A2	C536	F5	C2028	A4	C2306	A4
	C104	B1	C537	G5	C2029	B4	C2307	D5
	C124	A4	C538	H5	C2030	B4	C5011	H5
	C127	B5	C539	E5	C2031	B4	C5012	H5
	C128	B5	C540	E5	C2032	B4	C5019	H5
F	C129	B5	C541	F5	C2033	B4	C5020	H5
	C130	B5	C542	F5	C2036	B4	C5021	H5
	C131	B5	C543	F5	C2052	B2	C5022	H5
	C132	B5	C544	F5	C2053	B2	C5024	D5
	C133	B5	C545	E5	C2056	D4	C5801	H1
	C134	B5	C546	F5	C2062	A4	C5802	H1
	C135	B5	C547	F5	C2063	A4		
	C136	A5	C557	H3	C2064	A4		
	C137	A5	C558	H3	C2065	A4		
	C138	C3	C559	G4	C2066	A4		
	C141	D4	C561	H3	C2073	E2		
	C142	D4	C562	H3	C2074	E2		
	C143	D4	C563	G4	C2076	A4		
	C144	C5	C566	G4	C2079	E2		
	C151	D2	C567	H4	C2092	F4		
	C296	C1	C568	H4	C2094	F4		
	C400	D1	C569	G4	C2095	E4		
	C401	D1	C570	G4	C2096	E4		
G	C402	F1	C571	H4	C2164	G3		
	C403	F1	C572	H4	C2165	G3		
	C404	E2	C573	G4	C2175	G4		
	C405	E2	C574	G4	C2176	G4		
	C406	E2	C575	H4	C2204	E4		
	C408	F2	C576	G4	C2208	H5		
	C409	F2	C577	G4	C2247	E4		
	C410	H1	C579	H5	C2248	E4		
	C411	G1	C581	G5	C2249	E4		
	C412	H2	C582	H5	C2250	E4		
	C413	H2	C583	G5	C2252	E4		
	C414	F2	C584	G5	C2253	E4		
	C415	F2	C585	G5	C2254	E4		
	C416	H2	C586	F5	C2255	E4		
	C417	H2	C587	H5	C2256	G3		
	C418	F2	C588	G5	C2257	G3		
	C419	F2	C589	G5	C2258	G3		
	C420	G2	C590	H5	C2259	G3		
	C421	G2	C591	H5	C2260	G4		
H	C422	G2	C592	H5	C2261	G3		
	C423	G2	C593	H5	C2262	G3		
	C424	G2	C594	G5	C2263	G3		
	C425	G2	C595	G5	C2264	G3		
	C426	G2	C596	H5	C2265	G4		
	C427	G3	C598	H5	C2268	A4		
	C428	G3	C599	G5	C2269	A4		
	C429	G3	C900	B5	C2270	A4		
	C430	G3	C901	B2	C2271	D5		
	C432	G3	C902	B2	C2272	A4		
	C433	G3	C903	B5	C2273	A4		
	C434	G1	C904	B2	C2274	A4		
	C435	G2	C905	B5	C2275	A4		

8-8

PCB LAYOUT (COMPONENT VIEW)



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C3	D2	C531	A2	D102	C4	R41	C2	R439	D1
C4	D2	C532	A3	D103	C4	R42	C2	R440	A2
C5	D2	C533	A3	D104	C4	R103	C3	R441	A2
C6	C1	C534	A3	D105	C4	R105	D3	R442	B2
C7	C1	C535	A3	D106	C4	R107	D3	R443	B2
C8	C1	C536	A4	D107	C4	R108	C4	R444	B2
C9	C1	C537	A4	D108	C4	R109	D3	R446	B2
C10	C1	C538	A3	D400	A1	R111	D3	R448	B2
C11	C1	C539	A3	D404	C3	R112	D3	R449	B2
C12	C1	C540	A3	D405	C3	R113	D3	R500	B4
C13	C1	C541	A3	D910	B3	R114	C3	R501	B3
C14	C1	C542	A3	FB1	C4	R116	C3	R502	B3
C15	C1	C543	A4	FB100	C4	R118	C3	R503	B3
C16	C2	C544	A4	FB101	C3	R120	D3	R504	B2
C17	C2	C545	A3	FB103	B4	R121	C4	R505	A3
C18	C2	C546	A3	FB104	A4	R122	C3	R506	A3
C19	C3	C547	A4	FB502	B2	R123	C4	R507	A2
C20	C3	C548	A3	FB503	B2	R124	C4	R508	A4
C21	B4	C549	A3	FB900	C4	R125	C4	R509	A3
C22	B4	C550	A3	IC100	D2	R126	C3	R510	A3
C39	D4	C554	A3	IC101	C3	R129	C4	R511	A3
C40	D1	C555	A3	IC102	D2	R130	C4	R512	A3
C41	B2	C556	A4	IC103	D3	R131	C4	R513	A4
C42	B2	C557	B3	IC104	C2	R132	C4	R514	A4
C43	C3	C558	B2	IC105	D4	R133	C4	R515	B3
C102	D2	C559	B2	IC106	C3	R134	C4	R516	B4
C103	C3	C561	B2	IC400	B2	R135	C4	R517	B4
C104	C3	C562	B2	IC401	A2	R137	B4	R518	B4
C127	C4	C563	B3	IC402	B2	R138	D4	R519	A4
C128	C4	C566	B2	IC500	B3	R139	D4	R520	A4
C129	C4	C567	B4	IC501	B3	R143	D4	R521	A2
C130	C4	C568	B2	IC502	B4	R144	D4	R522	A4
C131	C4	C569	B4	IC503	B2	R145	D4	R523	A4
C132	C4	C570	B4	IC504	B4	R146	C4	R524	A2
C133	C4	C571	B2	IC505	B3	R147	C2	R525	A2
C134	C4	C572	B2	IC506	B3	R148	C2	R526	A2
C135	C4	C573	B4	IC900	B4	R149	C2	R527	A2
C136	A4	C574	B4	IC901	C4	R150	C2	R528	A2
C137	A4	C575	B2	IC914	B3	R151	D2	R529	A2
C138	C2	C576	A4	JK401	A1	R152	D2	R530	A2
C141	C3	C577	A4	JK402	A2	R153	D2	R531	A2
C142	C3	C579	B2	JK403	A3	R154	D2	R532	A2
C143	D4	C581	B4	JK405	A2	R155	C2	R533	B3
C144	D4	C582	B2	JK500	A3	R156	C2	R900	C1
C151	C4	C583	A4	JK581	D1	R157	C2	R901	C1
C296	D3	C584	B4	JMP1	C3	R158	C2	R902	C1
C400	A2	C585	A4	JMP2	C3	R159	C2	R903	C1
C401	A2	C586	A4	JMP3	C3	R160	C2	R905	C1
C402	A2	C587	A2	JMP4	C3	R161	C2	R906	C1
C403	A2	C588	A4	JMP5	C3	R162	C2	R907	C1
C404	A3	C589	A4	JMP6	C3	R163	D4	R908	C1
C405	A2	C590	A2	JMP7	C3	R164	D4	R919	B4
C406	A2	C591	A2	JMP9	B4	R171	C3	R920	B4
C408	B2	C592	A2	JMP10	C4	R172	C3	R921	B4
C409	B2	C593	A2	JMP8	C3	R177	C3	R922	B4
C410	D4	C594	A4	L1	C1	R178	C4	R923	C4
C411	A2	C595	A4	L2	C2	R179	C3	R924	C4
C412	D1	C596	A2	L3	C1	R180	D4	R925	B4
C413	D1	C598	A3	L100	C4	R181	C3	R926	C4
C414	B2	C599	A4	L101	C4	R182	D4	R996	D3
C415	B2	C900	C4	L102	C4	R183	D4	R2018	C3
C416	C2	C901	C4	L103	C4	R184	D4	R2061	B2
C417	B2	C902	C4	L400	D1	R189	D4	R2108	C3
C418	B2	C903	C4	L401	D1	R185	D4	RB2002	C4
C419	B2	C904	B4	L500	A3	R186	D4	RP100	D4
C420	B2	C905	C4	L501	A3	R187	C4	RP101	D4
C421	B2	C906	C1	L502	A3	R191	C3	RP102	D4
C422	B2	C907	C1	L503	A3	R193	C3	RP103	D4
C423	C2	C908	C4	L504	A3	R248	D3	RP104	C4
C424	C2	C909	B4	L507	A3	R400	A2	RP105	C4
C425	C2	C910	C4	L508	A3	R401	A2	RP106	D4
C426	B2	C912	C4	L509	A3	R402	A2	RP107	C3
C427	B2	C911	C4	L513	A2	R403	A1	RP108	C3
C428	B2	C928	C3	L514	A2	R404	A1	RP109	C3
C429	B2	C929	B3	L515	A4	R405	A2	RP110	C3
C430	B2	C930	B3	L2005	C3	R406	A2	XL100	C3
C432	B2	C931	B3	L2008	B2	R407	B2	XL500	B3
C433	B2	C935	D2	L2009	B3	R408	B2	ZD100	C4
C434	A2	C936	C4	L2010	B3	R409	A1	ZD401	C2
C435	C2	C937	C3	L2032	A4	R410	A1	Z2001	B2
C436	C2	C938	C1	L2036	A4	R411	A3		
C437	C2	C2019	D4	L2037	A3	R412	A2		
C500	B4	C2052	B2	L2038	A4	R413	A2		
C501	B3	C2053	B2	L2045	A4	R414	B2		
C502	B3	C2056	C3	Q101	D4	R415	B2		
C504	B3	C2073	B4	Q102	C4	R417	A2		
C506	B3	C2074	B4	Q400	A2	R418	A2		
C510	B3	C2076	C4	Q401	A2	R419	A2		
C511	B3	C2079	C3	Q402	A2	R420	B2		
C512	B3	C2164	B2	Q403	A2	R421	A2		
C513	B3	C2165	B2	Q404	B2	R424	C3		
C514	B3	C2208	A2	Q900	C1	R425	D1		
C515	B3	C2216	A4	Q903	C1	R427	A2		
C516	B3	CN1	D4	Q904	C1	R428	A2		
C517	A3	CN2	D2	Q905	C1	R429	D1		
C518	A3	CN102	D4	Q906	B4	R430	B2		
C519	A2	CN103	C4	Q907	B4	R431	A2		
C520	A2	CN105	D2	Q908	C4	R432	B2		
C523	B4	CN401	D1	Q909	C4	R433	B2		
C525	B3	CN581	D1	Q2007	C3	R434	B2		
C526	A3	CN903	B4	R1	B3	R435	D1		
C527	A2	CN904	B4	R2	D2	R436	A2		
C528	B3	CN905	C4						
		CP2001	A4						

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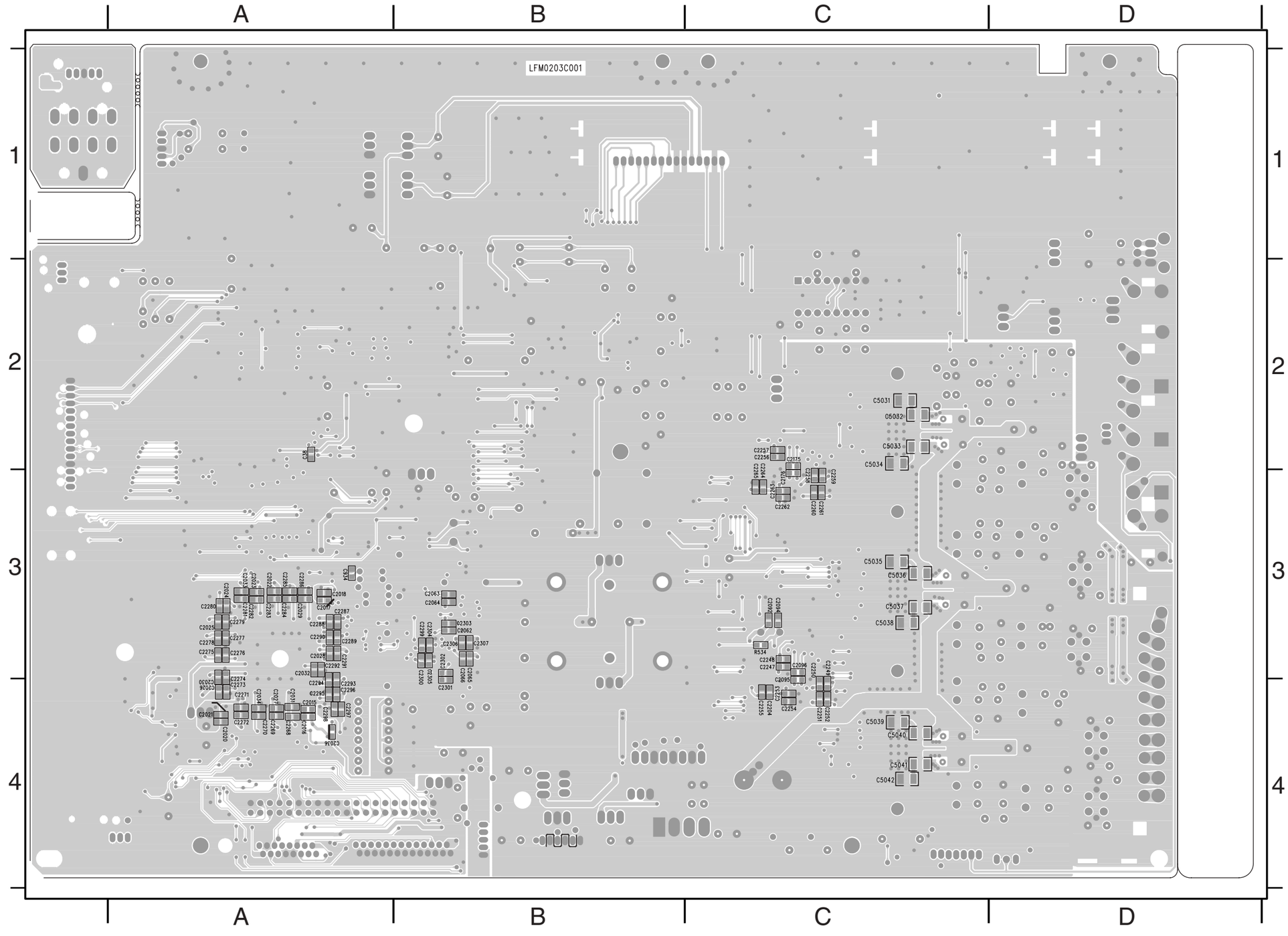
PCB LAYOUT (COPPERSIDE VIEW)



R534	C3	C2270	A4
C38	A2	C2271	A4
C934	A3	C2272	A4
C2015	A4	C2273	A4
C2016	A4	C2274	A4
C2017	A3	C2275	A3
C2018	A3	C2276	A3
C2020	A4	C2277	A3
C2021	A4	C2278	A3
C2022	A3	C2279	A3
C2023	A3	C2280	A3
C2024	A3	C2281	A3
C2025	A3	C2282	A3
C2026	A4	C2283	A3
C2027	A4	C2284	A3
C2028	A3	C2285	A3
C2029	A3	C2286	A3
C2030	A4	C2287	A3
C2031	A4	C2288	A3
C2032	A3	C2289	A3
C2033	A3	C2290	A3
C2034	A4	C2291	A3
C2036	A4	C2292	A3
C2092	C3	C2293	A4
C2094	C3	C2294	A4
C2095	C4	C2295	A4
C2096	C3	C2296	A4
C2204	C4	C2297	A4
C2247	C3	C2298	A4
C2248	C3	C2299	B3
C2249	C3	C2300	B3
C2250	C3	C2301	B4
C2251	C4	C2302	B3
C2252	C4	C2303	B3
C2253	C4	C2304	B3
C2254	C4	C2305	B3
C2255	C4	C2306	B3
C2257	C2	C2307	B3
C2062	B3	C5031	C2
C2063	B3	C5032	C2
C2064	B3	C5033	C2
C2065	B3	C5034	C2
C2066	B3	C5035	C3
C2175	C2	C5036	C3
C2176	C3	C5037	C3
C2256	C2	C5038	C3
C2258	C3	C5039	C4
C2259	C3	C5040	C4
C2260	C3	C5041	C4
C2261	C3	C5042	C4
C2262	C3		
C2263	C3		
C2264	C3		
C2265	C3		
C2268	A4		
C2269	A4		

8-10

ELECTRICAL PARTS LIST - MAIN BOARD

ELECTRICAL PARTS LIST - MAIN BOARD

MISCELLANEOUS

JK401	9965 000 12506	SOCKET OPTICAL OUT
JK402	9965 000 12507	CINCH SOCKET 1P BLACK
JK403	9965 000 12507	CINCH SOCKET SUB-WOOFER OUT
JK405	9965 000 12505	CINCH SOCKET 6P WHITE/RED
JK500	9965 000 12502	LOUDSPEAKER SOCKET 10P
JK581	9965 000 14155	HEADPHONE SOCKET
CN102	9965 000 14144	FLEX SOCKET 16PIN VERT.
CN103	9965 000 14145	FLEX SOCKET 26PIN VERT.
XL100	9965 000 12473	CRYSTAL 27MHZ
XL500	9965 000 14167	X'TAL 6,144MHZ HC-49/U

CAPACITORS

C1	4822 124 40248	10uF 20% 63V
C2	4822 126 13221	100pF 2% NP0 63V
C3	4822 126 13221	100pF 2% NP0 63V
C4	4822 126 13221	100pF 2% NP0 63V
C5	4822 126 13221	100pF 2% NP0 63V
C6	4822 126 14585	100nF 10% X7R 0805 50V
C7	4822 126 14585	100nF 10% X7R 0805 50V
C8	9965 000 12588	1000pF 50V 5%
C9	4822 126 14585	100nF 10% X7R 0805 50V
C10	4822 126 14585	100nF 10% X7R 0805 50V
C11	9965 000 12588	1000pF 50V 5%
C12	4822 126 14585	100nF 10% X7R 0805 50V
C13	9965 000 12588	1000pF 50V 5%
C14	4822 126 14585	100nF 10% X7R 0805 50V
C15	4822 126 14585	100nF 10% X7R 0805 50V
C16	4822 126 13221	100pF 2% NP0 63V
C17	4822 126 13221	100pF 2% NP0 63V
C18	4822 126 13221	100pF 2% NP0 63V
C19	4822 126 14585	100nF 10% X7R 0805 50V
C20	4822 126 14585	100nF 10% X7R 0805 50V
C21	4822 126 14585	100nF 10% X7R 0805 50V
C22	4822 126 14585	100nF 10% X7R 0805 50V
C30	9965 000 13078	330pF 50V 5%
C38	4822 126 14585	100nF 10% X7R 0805 50V
C39	9965 000 14130	100UF 16V 20%
C40	5322 122 32331	1nF 10% 100V
C41	4822 126 13221	100pF 2% NP0 63V
C42	4822 126 13221	100pF 2% NP0 63V
C43	4822 126 13221	100pF 2% NP0 63V
C102	4822 126 14585	100nF 10% X7R 0805 50V
C103	4822 126 14585	100nF 10% X7R 0805 50V
C104	9965 000 14450	0,47uF 25V 20%
C124	2238 861 18339	33pF 1% 50V
C127	4822 126 14585	100nF 10% X7R 0805 50V
C128	9965 000 12475	470pF 50V 5%
C129	9965 000 12475	470pF 50V 5%
C130	9965 000 12475	470pF 50V 5%
C131	9965 000 12475	470pF 50V 5%
C132	9965 000 12475	470pF 50V 5%
C133	9965 000 12475	470pF 50V 5%
C134	9965 000 12475	470pF 50V 5%
C135	9965 000 12475	470pF 50V 5%
C136	4822 126 13221	100pF 2% NP0 63V
C137	4822 126 13221	100pF 2% NP0 63V
C138	4822 126 14585	100nF 10% X7R 0805 50V
C141	5322 122 32658	22pF 5% 50V
C142	5322 122 32658	22pF 5% 50V
C143	4822 126 14585	100nF 10% X7R 0805 50V
C144	9965 000 12588	1000pF 50V 5%
C151	4822 126 13486	15pF 2% NP0 63V
C296	9965 000 12559	100uF 16V 20%
C400	4822 126 14585	100nF 10% X7R 0805 50V
C401	4822 124 40207	100uF 20% 25V
C402	4822 126 13221	100pF 2% NP0 63V
C403	4822 126 13221	100pF 2% NP0 63V
C404	9965 000 12476	0,01uF 50V 20%
C405	9965 000 12524	0,047uF 50V 20%
C406	9965 000 12573	0,022uF 50V 20%
C408	9965 000 12522	4,7uF 50V 20%
C409	9965 000 12522	4,7uF 50V 20%
C410	9965 000 16316	1uF 50V 20%
C411	4822 126 13221	100pF 2% NP0 63V
C412	4822 126 14585	100nF 10% X7R 0805 50V
C413	4822 126 14585	100nF 10% X7R 0805 50V
C414	9965 000 12522	4,7uF 50V 20%
C415	9965 000 12522	4,7uF 50V 20%
C416	4822 124 40248	10uF 20% 63V
C417	4822 124 40248	10uF 20% 63V
C418	4822 126 14585	100nF 10% X7R 0805 50V
C419	9965 000 12476	0,01uF 50V 20%
C420	9965 000 12522	4,7uF 50V 20%
C421	9965 000 12522	4,7uF 50V 20%
C422	4822 126 14585	100nF 10% X7R 0805 50V
C423	9965 000 14448	470uF 50V 20%
C424	9965 000 12588	1000pF 50V 5%
C425	4822 126 14585	100nF 10% X7R 0805 50V
C426	9965 000 12522	4,7uF 50V 20%
C427	4822 126 14585	100nF 10% X7R 0805 50V
C428	9965 000 12588	1000pF 50V 5%
C429	9965 000 12559	100uF 16V 20%
C430	9965 000 14135	0,001uF 50V 10%
C432	4822 126 14585	100nF 10% X7R 0805 50V
C433	9965 000 12522	4,7uF 50V 20%
C434	4822 126 13221	100pF 2% NP0 63V
C435	9965 000 14136	0,1uF 50V 20%
C436	9965 000 14394	56PF 50V 5%
C437	5322 116 80853	560pF 50V 5%
C441	4822 126 13221	100pF 2% NP0 63V
C442	4822 126 13221	100pF 2% NP0 63V
C443	4822 126 13221	100pF 2% NP0 63V
C444	4822 126 13221	100pF 2% NP0 63V
C445	4822 126 13221	100pF 2% NP0 63V
C446	4822 126 13221	100pF 2% NP0 63V
C447	4822 126 13221	100pF 2% NP0 63V
C448	4822 126 13221	100pF 2% NP0 63V
C450	9965 000 16320	220uF 16V 20%
C500	4822 126 13221	100pF 2% NP0 63V
C501	4822 126 14585	100nF 10% X7R 0805 50V
C502	4822 126 14585	100nF 10% X7R 0805 50V
C504	4822 126 14585	100nF 10% X7R 0805 50V
C506	4822 126 14585	100nF 10% X7R 0805 50V
C510	9965 000 12588	1000pF 50V 5%
C511	9965 000 14138	1uF 25V 10%
C512	4822 126 14585	100nF 10% X7R 0805 50V
C513	4822 126 14585	100nF 10% X7R 0805 50V
C514	9965 000 12588	1000pF 50V 5%
C515	4822 126 14585	100nF 10% X7R 0805 50V
C516	4822 126 14585	100nF 10% X7R 0805 50V
C517	9965 000 14139	10uF 50V 20%
C518	9965 000 14139	10uF 50V 20%
C519	9965 000 14139	10uF 50V 20%
C520	9965 000 14139	10uF 50V 20%
C523	9965 000 14133	1uF 50V 20%
C525	4822 126 14585	100nF 10% X7R 0805 50V
C526	9965 000 14140	1000uF 50V 20%
C527	9965 000 14140	1000uF 50V 20%
C528	9965 000 12588	1000pF 50V 5%
C529	4822 126 13618	330pF 1% NPO 63V
C530	4822 126 13618	330pF 1% NPO 63V
C531	4822 126 13618	330pF 1% NPO 63V
C532	9965 000 16686	0,47uF 50V 10% X7R
C533	9965 000 16686	0,47uF 50V 10% X7R
C534	9965 000 16686	0,47uF 50V 10% X7R
C535	9965 000 16686	0,47uF 50V 10% X7R
C536	9965 000 14133	1uF 50V 20%
C537	9965 000 14133	1uF 50V 20%
C538	9965 000 14133	1uF 50V 20%
C539	9965 000 14133	1uF 50V 20%
C540	9965 000 14133	1uF 50V 20%
C541	9965 000 14133	1uF 50V 20%
C542	9965 000 14133	1uF 50V 20%
C543	9965 000 14133	1uF 50V 20%
C544	9965 000 14133	1uF 50V 20%
C545	9965 000 16686	0,47uF 50V 10% X7R
C546	9965 000 16686	0,47uF 50V 10% X7R
C547	9965 000 16686	0,47uF 50V 10% X7R
C548	9965 000 14220	0,1uF 50V 10%
C549	9965 000 14220	0,1uF 50V 10%
C550	9965 000 14220	0,1uF 50V 10%
C554	9965 000 14220	0,1uF 50V 10%
C555	9965 000 14220	0,1uF 50V 10%
C556	9965 000 14220	0,1uF 50V 10%
C557	4822 126 13221	100pF 2% NP0 63V
C558	4822 126 13221	100pF 2% NP0 63V
C559	4822 126 14585	100nF 10% X7R 0805 50V
C561	4822 126 14585	100nF 10% X7R 0805 50V
C562	4822 126 14585	100nF 10% X7R 0805 50V
C563	9965 000 12522	4,7uF 50V 20%
C566	9965 000 14138	1uF 25V 10%
C567	9965 000 14138	1uF 25V 10%
C568	4822 126 14585	100nF 10% X7R 0805 50V
C569	9965 000 12588	1000pF 50V 5%
C570	4822 126 14585	100nF 10% X7R 0805 50V
C571	9965 000 12588	1000pF 50V 5%
C572	4822 126 14585	100nF 10% X7R 0805 50V
C573	4822 126 14585	100nF 10% X7R 0805 50V
C574	4822 126 14585	100nF 10% X7R 0805 50V
C575	4822 126 14585	100nF 10% X7R 0805 50V
C576	9965 000 14139	10uF 50V 20%
C577	9965 000 14139	10uF 50V 20%
C579	4822 126 14585	100nF 10% X7R 0805 50V
C581	4822 126 14585	100nF 10% X7R 0805 50V
C582	9965 000 12588	1000pF 50V 5%
C583	9965 000 14140	1000uF 50V 20%
C584	9965 000 12588	1000pF 50V 5%
C585	4822 126 13618	330pF 1% NPO 63V
C586	4822 126 13618	330pF 1% NPO 63V
C587	9965 000 12588	1000pF 50V 5%
C588	9965 000 14133	1uF 50V 20%
C589	9965 000 14133	1uF 50V 20%
C590	9965 000 14133	1uF 50V 20%
C591	9965 000 14133	1uF 50V 20%
C592	9965 000 14133	1uF 50V 20%
C593	9965 000 14133	1uF 50V 20%
C594	9965 000 14133	1uF 50V 20%
C595	9965 000 14133	1uF 50V 20%
C596	9965 000 14133	1uF 50V 20%
C598	9965 000 14133	1uF 50V 20%
C599	9965 000 16686	0,47uF 50V 10% X7R
C900	9965 000 12558	220uF 16V 20%
C901	4822 126 14585	100nF 10% X7R 0805 50V
C902	4822 126 14585	100nF 10% X7R 0805 50V
C903	9965 000 12558	220uF 16V 20%
C904	4822 126 14585	100nF 10% X7R 0805 50V
C905	4822 126 14585	100nF 10% X7R 0805 50V
C906	9965 000 12558	220uF 16V 20%
C907	9965 000 14142	470uF 16V 20%
C908	9965 000 12588	1000pF 50V 5%
C909	9965 000 14142	470uF 16V 20%
C910	9965 000 12558	220uF 16V 20%
C911	9965 000 12558	220uF 16V 20%
C912	9965 000 12588	1000pF 50V 5%
C928	4822 126 14585	100nF 10% X7R 0805 50V
C929	4822 126 14585	100nF 10% X7R 0805 50V
C930	4822 126 14585	100nF 10% X7R 0805 50V
C931	4822 126 14585	100nF 10% X7R 0805 50V

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ELECTRICAL PARTS LIST - MAIN BOARD

ELECTRICAL PARTS LIST - MAIN BOARD

CAPACITORS

C934	9965 000 14136	0,1uF 50V 20%
C935	5322 122 32658	22pF 5% 50V
C936	9965 000 14136	0,1uF 50V 20%
C937	9965 000 14136	0,1uF 50V 20%
C938	9965 000 14143	1000uF 16V 20%
C2015	4822 126 14585	100nF 10% X7R 0805 50V
C2016	9965 000 12588	1000pF 50V 5%
C2017	4822 126 14585	100nF 10% X7R 0805 50V
C2018	9965 000 12588	1000pF 50V 5%
C2019	9965 000 12559	100uF 16V 20%
C2020	9965 000 12588	1000pF 50V 5%
C2021	4822 126 14585	100nF 10% X7R 0805 50V
C2022	9965 000 12588	1000pF 50V 5%
C2023	9965 000 12588	1000pF 50V 5%
C2024	4822 126 14585	100nF 10% X7R 0805 50V
C2025	9965 000 12588	1000pF 50V 5%
C2026	9965 000 12588	1000pF 50V 5%
C2027	4822 126 14585	100nF 10% X7R 0805 50V
C2028	4822 126 14585	100nF 10% X7R 0805 50V
C2029	4822 126 14585	100nF 10% X7R 0805 50V
C2030	9965 000 12588	1000pF 50V 5%
C2031	4822 126 14585	100nF 10% X7R 0805 50V
C2032	4822 126 14585	100nF 10% X7R 0805 50V
C2033	9965 000 12588	1000pF 50V 5%
C2036	4822 126 14585	100nF 10% X7R 0805 50V
C2052	4822 124 40207	100uF 20% 25V
C2053	4822 126 14585	100nF 10% X7R 0805 50V
C2056	9965 000 12588	1000pF 50V 5%
C2062	4822 126 14585	100nF 10% X7R 0805 50V
C2063	9965 000 12588	1000pF 50V 5%
C2064	4822 126 14585	100nF 10% X7R 0805 50V
C2065	9965 000 12588	1000pF 50V 5%
C2066	4822 126 14585	100nF 10% X7R 0805 50V
C2073	9965 000 14132	4700uF 50V 20%
C2074	5322 121 42578	1uF 50V 20%
C2076	4822 126 14585	100nF 10% X7R 0805 50V
C2079	4822 124 40207	100uF 20% 25V
C2092	2238 861 18339	33pF 1% 50V
C2094	2238 861 18339	33pF 1% 50V
C2095	9965 000 12588	1000pF 50V 5%
C2096	4822 126 14585	100nF 10% X7R 0805 50V
C2164	9965 000 12588	1000pF 50V 5%
C2165	9965 000 12588	1000pF 50V 5%
C2175	4822 126 14585	100nF 10% X7R 0805 50V
C2176	9965 000 12588	1000pF 50V 5%
C2204	4822 126 14585	100nF 10% X7R 0805 50V
C2208	9965 000 14133	1uF 50V 20%
C2216	9965 000 14220	0,1uF 50V 10%
C2247	4822 126 14585	100nF 10% X7R 0805 50V
C2248	9965 000 12588	1000pF 50V 5%
C2249	9965 000 12588	1000pF 50V 5%
C2250	4822 126 14585	100nF 10% X7R 0805 50V
C2252	9965 000 12588	1000pF 50V 5%
C2253	4822 126 14585	100nF 10% X7R 0805 50V
C2254	9965 000 12588	1000pF 50V 5%
C2255	4822 126 14585	100nF 10% X7R 0805 50V
C2256	4822 126 14585	100nF 10% X7R 0805 50V
C2257	9965 000 12588	1000pF 50V 5%
C2258	4822 126 14585	100nF 10% X7R 0805 50V
C2259	9965 000 12588	1000pF 50V 5%
C2260	4822 126 14585	100nF 10% X7R 0805 50V
C2261	9965 000 12588	1000pF 50V 5%
C2262	9965 000 12588	1000pF 50V 5%
C2263	4822 126 14585	100nF 10% X7R 0805 50V
C2264	4822 126 14585	100nF 10% X7R 0805 50V
C2265	4822 126 14585	100nF 10% X7R 0805 50V
C2268	9965 000 12588	1000pF 50V 5%
C2269	9965 000 12588	1000pF 50V 5%
C2270	9965 000 12588	1000pF 50V 5%
C2271	4822 126 14585	100nF 10% X7R 0805 50V
C2272	9965 000 12588	1000pF 50V 5%
C2273	4822 126 14585	100nF 10% X7R 0805 50V
C2274	4822 126 14585	100nF 10% X7R 0805 50V
C2275	9965 000 12588	1000pF 50V 5%
C2276	4822 126 14585	100nF 10% X7R 0805 50V
C2277	4822 126 14585	100nF 10% X7R 0805 50V
C2278	9965 000 12588	1000pF 50V 5%
C2279	4822 126 14585	100nF 10% X7R 0805 50V
C2280	9965 000 12588	1000pF 50V 5%
C2281	4822 126 14585	100nF 10% X7R 0805 50V
C2282	4822 126 14585	100nF 10% X7R 0805 50V
C2283	4822 126 14585	100nF 10% X7R 0805 50V
C2284	4822 126 14585	100nF 10% X7R 0805 50V
C2285	9965 000 12588	1000pF 50V 5%
C2286	9965 000 12588	1000pF 50V 5%
C2287	9965 000 12588	1000pF 50V 5%
C2288	4822 126 14585	100nF 10% X7R 0805 50V
C2289	9965 000 12588	1000pF 50V 5%
C2290	4822 126 14585	100nF 10% X7R 0805 50V
C2291	9965 000 12588	1000pF 50V 5%
C2292	4822 126 14585	100nF 10% X7R 0805 50V
C2293	9965 000 12588	1000pF 50V 5%
C2294	4822 126 14585	100nF 10% X7R 0805 50V
C2295	4822 126 14585	100nF 10% X7R 0805 50V
C2296	9965 000 12588	1000pF 50V 5%
C2297	9965 000 12588	1000pF 50V 5%
C2298	4822 126 14585	100nF 10% X7R 0805 50V
C2299	4822 126 14585	100nF 10% X7R 0805 50V
C2300	4822 126 14585	100nF 10% X7R 0805 50V
C2301	9965 000 12588	1000pF 50V 5%
C2302	4822 126 14585	100nF 10% X7R 0805 50V
C2303	9965 000 12588	1000pF 50V 5%
C2304	9965 000 12588	1000pF 50V 5%
C2305	9965 000 12588	1000pF 50V 5%
C2306	4822 126 14585	100nF 10% X7R 0805 50V
C2307	9965 000 12588	1000pF 50V 5%
C5011	9965 000 16686	0,47uF 50V 10% X7R
C5012	9965 000 16686	0,47uF 50V 10% X7R
C5015	9965 000 14220	0,1uF 50V 10%
C5016	9965 000 14220	0,1uF 50V 10%
C5019	9965 000 14138	1uF 25V 10%
C5020	9965 000 14138	1uF 25V 10%
C5021	9965 000 14138	1uF 25V 10%
C5022	9965 000 14138	1uF 25V 10%
C5023	9965 000 14220	0,1uF 50V 10%
C5024	5322 122 32331	1nF 10% 100V
C5031	9965 000 16688	1uF 25V 10%
C5032	9965 000 16688	1uF 25V 10%
C5033	9965 000 16688	1uF 25V 10%
C5034	9965 000 16688	1uF 25V 10%
C5035	9965 000 16688	1uF 25V 10%
C5036	9965 000 16688	1uF 25V 10%
C5037	9965 000 16688	1uF 25V 10%
C5038	9965 000 16688	1uF 25V 10%
C5039	9965 000 16688	1uF 25V 10%
C5040	9965 000 16688	1uF 25V 10%
C5041	9965 000 16688	1uF 25V 10%
C5042	9965 000 16688	1uF 25V 10%
C5801	9965 000 14141	0,01uF 50V +80-20%
C5802	9965 000 14141	0,01uF 50V +80-20%

RESISTORS

R1	9965 000 12482	47K 1/10W 5%
R2	9965 000 12515	2,2K 1/6W 5% CF
R3	9965 000 12515	2,2K 1/6W 5% CF
R41	4822 117 11373	100R 1% RC12H 0805
R42	4822 117 11373	100R 1% RC12H 0805
R103	4822 051 20122	1,2K 5% 0,1W
R105	4822 051 20008	0R JUMPER 0805
R107	4822 051 20008	0R JUMPER 0805
R108	4822 051 20301	300R 5% 0,1W
R109	4822 051 20472	4,7K 5% 0,1W
R111	2322 734 63309	33R 1/10W 5%
R112	2322 734 63309	33R 1/10W 5%
R113	2322 734 63309	33R 1/10W 5%
R114	4822 051 20472	4,7K 5% 0,1W
R116	4822 051 20472	4,7K 5% 0,1W
R118	4822 051 20472	4,7K 5% 0,1W
R120	4822 051 20472	4,7K 5% 0,1W
R121	4822 051 20102	1K 5% 0,1W
R122	2322 734 63309	33R 1/10W 5%
R123	2322 734 63309	33R 1/10W 5%
R124	2322 734 63309	33R 1/10W 5%
R125	2322 734 63309	33R 1/10W 5%
R126	2322 734 63309	33R 1/10W 5%
R129	4822 117 11504	270R 1% 0,1W
R130	4822 051 20102	1K 5% 0,1W
R131	4822 117 11927	75R 1% 0,1W
R132	4822 117 11927	75R 1% 0,1W
R133	4822 117 11927	75R 1% 0,1W
R134	4822 117 11927	75R 1% 0,1W
R135	4822 051 20008	0R JUMPER 0805
R137	2322 734 63309	33R 1/10W 5%
R139	2322 734 63309	33R 1/10W 5%
R143	4822 051 20008	0R JUMPER 0805
R144	4822 051 20472	4,7K 5% 0,1W
R145	4822 051 20472	4,7K 5% 0,1W
R146	4822 051 20008	0R JUMPER 0805
R147	2322 734 63309	33R 1/10W 5%
R148	2322 734 63309	33R 1/10W 5%
R149	2322 734 63309	33R 1/10W 5%
R150	2322 734 63309	33R 1/10W 5%
R151	2322 734 63309	33R 1/10W 5%
R152	2322 734 63309	33R 1/10W 5%
R154	2322 734 63309	33R 1/10W 5%
R155	2322 734 63309	33R 1/10W 5%
R156	2322 734 63309	33R 1/10W 5%
R157	2322 734 63309	33R 1/10W 5%
R158	2322 734 63309	33R 1/10W 5%
R159	4822 117 13577	330R 1% RC12H 0805 1,25W
R160	2322 734 63309	33R 1/10W 5%
R161	2322 734 63309	33R 1/10W 5%
R162	2322 734 63309	33R 1/10W 5%
R163	4822 051 20479	47R 5% 0,1W
R164	2322 734 63309	33R 1/10W 5%
R171	4822 051 20223	22K 5% 0,1W
R172	9965 000 12482	47K 1/10W 5%
R177	4822 051 20109	10R 5% 0,1W
R178	2322 734 63309	33R 1/10W 5%
R179	2322 734 63309	33R 1/10W 5%
R180	4822 051 20102	1K 5% 0,1W
R181	4822 051 20332	3,3K 5% 0,1W
R182	4822 051 20102	1K 5% 0,1W
R183	4822 051 20472	4,7K 5% 0,1W
R184	4822 051 20472	4,7K 5% 0,1W
R185	4822 051 20472	4,7K 5% 0,1W
R186	4822 051 20472	4,7K 5% 0,1W
R187	4822 051 20109	10R 5% 0,1W
R189	2322 734 63309	33R 1/10W 5%
R191	4822 051 20008	0R JUMPER 0805
R193	4822 051 20008	0R JUMPER 0805
R248	4822 051 20223	22K 5% 0,1W
R400	9965 000 14161	200R 1/10W 5%
R401	4822 117 11373	100R 1% RC12H 0805
R402	4822 051 20472	4,7K 5% 0,1W
R403	4822 117 11373	100R 1% RC12H 0805
R404	4822 117 11373	100R 1% RC12H 0805
R405	4822 116 83933	15K 1% 0,1W

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ELECTRICAL PARTS LIST - MAIN BOARD

RESISTORS

R406	4822 116 83933	15K 1% 0,1W
R407	4822 116 83933	15K 1% 0,1W
R408	4822 116 83933	15K 1% 0,1W
R409	9965 000 12484	10K 1/10W 5%
R410	4822 117 11373	100R 1% RC12H 0805
R411	4822 117 11139	1,5K 1% 0,1W
R412	4822 051 20102	1K 5% 0,1W
R413	4822 051 20102	1K 5% 0,1W
R414	4822 117 11373	100R 1% RC12H 0805
R415	4822 117 11373	100R 1% RC12H 0805
R417	4822 116 83933	15K 1% 0,1W
R418	4822 116 83933	15K 1% 0,1W
R419	9965 000 12484	10K 1/10W 5%
R420	4822 051 20472	4,7K 5% 0,1W
R421	9965 000 12484	10K 1/10W 5%
R424	4822 051 20008	0R JUMPER 0805
R425	4822 117 11148	56K 1% 0,1W
R427	4822 116 83933	15K 1% 0,1W
R428	4822 116 83933	15K 1% 0,1W
R429	9965 000 12484	10K 1/10W 5%
R430	4822 051 20472	4,7K 5% 0,1W
R431	4822 051 20102	1K 5% 0,1W
R432	4822 051 20472	4,7K 5% 0,1W
R433	4822 051 20472	4,7K 5% 0,1W
R434	4822 051 20472	4,7K 5% 0,1W
R435	4822 051 20472	4,7K 5% 0,1W
R436	4822 051 20102	1K 5% 0,1W
R439	4822 051 20472	4,7K 5% 0,1W
R440	4822 051 20471	470R 5% 0,1W
R441	4822 051 20471	470R 5% 0,1W
R442	9965 000 12482	47K 1/10W 5%
R443	4822 051 20472	4,7K 0,1W 5%
R444	9965 000 12484	10K 1/10W 5%
R446	4822 051 20472	4,7K 5% 0,1W
R448	4822 051 20472	4,7K 5% 0,1W
R449	4822 051 20472	4,7K 5% 0,1W
R500	4822 051 20472	4,7K 5% 0,1W
R501	4822 051 20105	1M 5% 0,1W
R502	9965 000 12484	10K 1/10W 5%
R503	9965 000 12484	10K 1/10W 5%
R504	9965 000 12484	10K 1/10W 5%
R505	4822 051 10229	22R 2% 0,25W
R506	4822 051 10229	22R 2% 0,25W
R507	4822 051 10229	22R 2% 0,25W
R508	9965 000 14163	6,2R 1/4W 5%
R509	9965 000 14163	6,2R 1/4W 5%
R510	9965 000 14163	6,2R 1/4W 5%
R511	9965 000 14163	6,2R 1/4W 5%
R512	9965 000 14163	6,2R 1/4W 5%
R513	9965 000 14163	6,2R 1/4W 5%
R514	9965 000 14163	6,2R 1/4W 5%
R515	4822 051 20472	4,7K 5% 0,1W
R516	9965 000 12482	47K 1/10W 5%
R517	9965 000 12482	47K 1/10W 5%
R518	9965 000 12484	10K 1/10W 5%
R519	4822 051 10229	22R 2% 0,25W
R520	4822 051 10229	22R 2% 0,25W
R521	4822 051 10229	22R 2% 0,25W
R522	9965 000 14163	6,2R 1/4W 5%
R523	9965 000 14163	6,2R 1/4W 5%
R524	9965 000 14163	6,2R 1/4W 5%
R525	9965 000 14163	6,2R 1/4W 5%
R526	9965 000 14163	6,2R 1/4W 5%
R527	9965 000 12484	10K 1/10W 5%
R528	9965 000 12484	10K 1/10W 5%
R529	4822 051 20202	2K 5% 0,1W
R530	4822 051 20202	2K 5% 0,1W
R531	9965 000 12484	10K 1/10W 5%
R532	9965 000 12484	10K 1/10W 5%
R533	4822 051 20008	0R JUMPER 0805
R534	4822 117 11373	100R 1% RC12H 0805
R900	9965 000 12484	10K 1/10W 5%
R901	9965 000 12484	10K 1/10W 5%
R902	4822 051 20223	22K 5% 0,1W
R903	4822 051 20102	1K 5% 0,1W
R905	9965 000 12484	10K 1/10W 5%
R906	9965 000 12484	10K 1/10W 5%
R907	4822 051 20223	22K 5% 0,1W
R908	4822 051 20102	1K 5% 0,1W
R919	9965 000 12484	10K 1/10W 5%
R920	9965 000 12484	10K 1/10W 5%
R921	4822 051 20223	22K 5% 0,1W
R922	4822 051 20561	560R 5% 0,1W
R923	9965 000 12484	10K 1/10W 5%
R924	9965 000 12484	10K 1/10W 5%
R925	4822 051 20223	22K 5% 0,1W
R926	4822 051 20102	1K 5% 0,1W
R996	9965 000 12484	10K 1/10W 5%
R2018	9965 000 12484	10K 1/10W 5%
R2061	4822 117 11139	1,5K 1% 0,1W
R2108	2322 734 63309	33R 1/10W 5%
RP100	9965 000 12486	33R X 4 1/10W 5%
RP101	9965 000 14449	47R X 4 1/10W 5%
RP102	9965 000 14449	47R X 4 1/10W 5%
RP103	9965 000 12486	33R X 4 1/10W 5%
RP104	9965 000 12486	33R X 4 1/10W 5%
RP105	9965 000 12486	33R X 4 1/10W 5%
RP106	9965 000 12486	33R X 4 1/10W 5%
RP107	9965 000 12487	10R X 4 1/10W 5%
RP108	9965 000 12486	33R X 4 1/10W 5%
RP109	9965 000 12487	10R X 4 1/10W 5%
RP110	9965 000 12487	10R X 4 1/10W 5%

COILS & FILTERS

FB1	9965 000 12470	FE BEAD D3,5 x 6MM
FB100	9965 000 14147	BEAD FERRITE 100R AT 100MHZ
FB101	9965 000 14147	BEAD FERRITE 100R AT 100MHZ
FB103	9965 000 12470	FE BEAD D3,5 x 6MM
FB104	9965 000 12470	FE BEAD D3,5 x 6MM
FB500	9965 000 12470	FE BEAD D3,5 x 6MM
FB502	9965 000 14147	BEAD FERRITE 100R AT 100MHZ
FB503	9965 000 14147	BEAD FERRITE 100R AT 100MHZ
FB900	9965 000 12470	FE BEAD D3,5 x 6MM
L1	9965 000 12568	CHOKE 10uH
L2	9965 000 12568	CHOKE 10uH
L3	9965 000 12568	CHOKE 10uH
L100	9965 000 14156	COIL 2,4uH 5% SMD 0805
L101	9965 000 14156	COIL 2,4uH 5% SMD 0805
L102	9965 000 14156	COIL 2,4uH 5% SMD 0805
L103	9965 000 14156	COIL 2,4uH 5% SMD 0805
L400	9965 000 15931	CHOKE 100uH 10%
L401	9965 000 15931	CHOKE 100uH 10%
L500	9965 000 16695	COIL 30uH 15% 1kHz 0,25V 2A
L501	9965 000 16695	COIL 30uH 15% 1kHz 0,25V 2A
L502	9965 000 16695	COIL 30uH 15% 1kHz 0,25V 2A
L503	9965 000 16695	COIL 30uH 15% 1kHz 0,25V 2A
L504	9965 000 14158	CHOKE COIL 20uH 2A
L507	9965 000 16692	COIL 20uH D0,5mm 4PIN
L508	9965 000 16692	COIL 20uH D0,5mm 4PIN
L509	9965 000 16692	COIL 20uH D0,5mm 4PIN
L513	9965 000 14160	COIL 150uH 10%
L514	9965 000 14160	COIL 150uH 10%
L515	9965 000 16692	COIL 20uH D0,5mm 4PIN
L2005	9965 000 14157	COIL 10uH 10% SMD 0805
L2009	9965 000 14147	BEAD FERRITE 100R AT 100MHZ
L2010	9965 000 14147	BEAD FERRITE 100R AT 100MHZ
L2032	9965 000 14158	CHOKE COIL 20uH 2A
L2034	9965 000 14158	CHOKE COIL 20uH 2A
L2036	9965 000 14158	CHOKE COIL 20uH 2A
L2037	9965 000 14158	CHOKE COIL 20uH 2A
L2038	9965 000 14158	CHOKE COIL 20uH 2A
L2045	9965 000 16692	COIL 20uH D0,5mm 4PIN

DIODES

D1	9965 000 12554	ZENER 3,8-4,0V 0,5W
D101	9965 000 14146	ZENER 6,4-6,7V 0,5W
D102	9965 000 14146	ZENER 6,4-6,7V 0,5W
D103	9965 000 14146	ZENER 6,4-6,7V 0,5W
D104	9965 000 14146	ZENER 6,4-6,7V 0,5W
D105	9965 000 14146	ZENER 6,4-6,7V 0,5W
D106	9965 000 14146	ZENER 6,4-6,7V 0,5W
D107	9965 000 14146	ZENER 6,4-6,7V 0,5W
D108	9965 000 14146	ZENER 6,4-6,7V 0,5W
D400	4822 130 30621	1N4148
D404	4822 130 30621	1N4148
D405	4822 130 30621	1N4148
D407	4822 130 30621	1N4148
D408	4822 130 30621	1N4148
D409	4822 130 30621	1N4148
D410	4822 130 30621	1N4148
D411	4822 130 31438	1N4001
D412	9965 000 16689	2.7R 0,5W 5%
D910	4822 130 31878	1N4003G
Z2001	4822 130 34233	BZX79-B5V1
ZD100	4822 130 34233	BZX79-B5V1
ZD401	9965 000 14168	ZENER 2,9~3,1V 0,5W
ZD402	4822 130 10851	HZ24-2

TRANSISTORS & INTEGRATED CIRCUITS

IC100	9965 000 21036	EEPROM AM29F080B-90CE
IC101	9965 000 14148	TC74HC04AFN
IC102	9965 000 12494	74HC374
IC103	9965 000 12495	ES6018 MICRO CPU
IC104	9965 000 12494	74HC374
IC105	9965 000 15884	EEPROM AT24C02
IC106	9965 000 12499	SYNCHRO, DRAM 4MX16 Y3V TW
IC400	4822 209 61677	TC4052BP
IC401	9965 000 15886	RC4558D
IC402	9965 000 14149	TLV320A IC23PW
IC408	9965 000 14150	IC 3PIN MAX809 SOT23
IC500	9965 000 14151	74LVT126 3,3V
IC501	9965 000 14152	74LVT125 3,3V
IC502	9965 000 14153	STA304A
IC503	9965 000 14154	STA505 50W X2
IC504	9965 000 14154	STA505 50W X2
IC505	9965 000 14153	STA304A
IC506	9965 000 14154	STA505 50W X2
IC900	9965 000 12512	BA05T
IC901	9965 000 12512	BA05T
IC914	9965 000 12493	BA033T REGULATOR 3,3V 1A
Q101	4822 130 41651	2SC2001L
Q102	4822 130 41198	2SC945P
Q2007	4822 130 41198	2SC945P
Q400	4822 130 41198	2SC945P
Q401	4822 130 43818	2SC2878-A
Q402	4822 130 43818	2SC2878-A
Q403	4822 130 43818	2SC2878-A
Q404	4822 130 63876	2SA733R
Q900	4822 130 41198	2SC945P
Q903	4822 130 63876	2SA733R
Q904	4822 130 41198	2SC945P
Q905	4822 130 63876	2SA733R
Q906	4822 130 41198	2SC945P
Q907	4822 130 10358	2SB772P/Q
Q908	4822 130 41198	2SC945P
Q909	4822 130 10358	2SB772P/Q

Note: Only the parts mentioned in this list are normal service spare parts.

SCART & RGB BOARD

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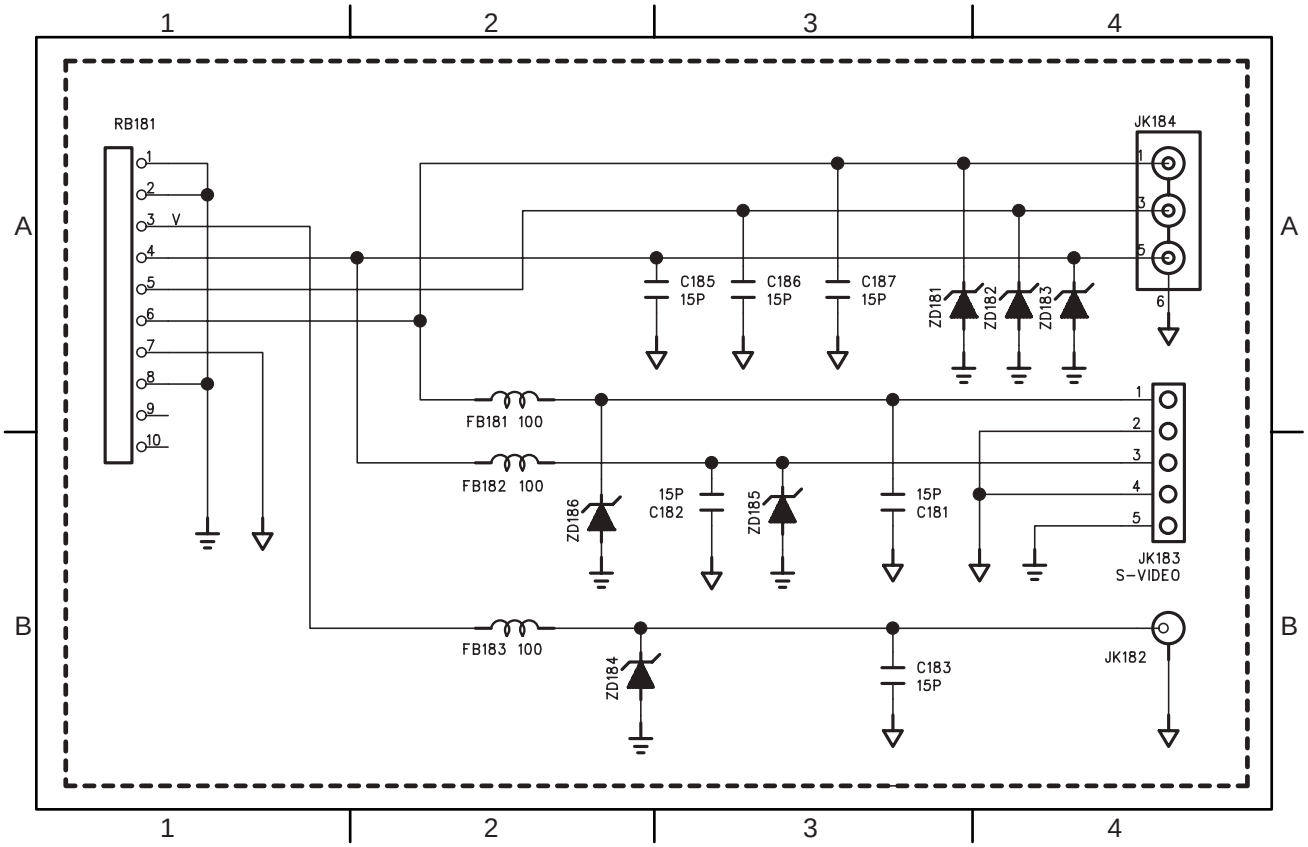
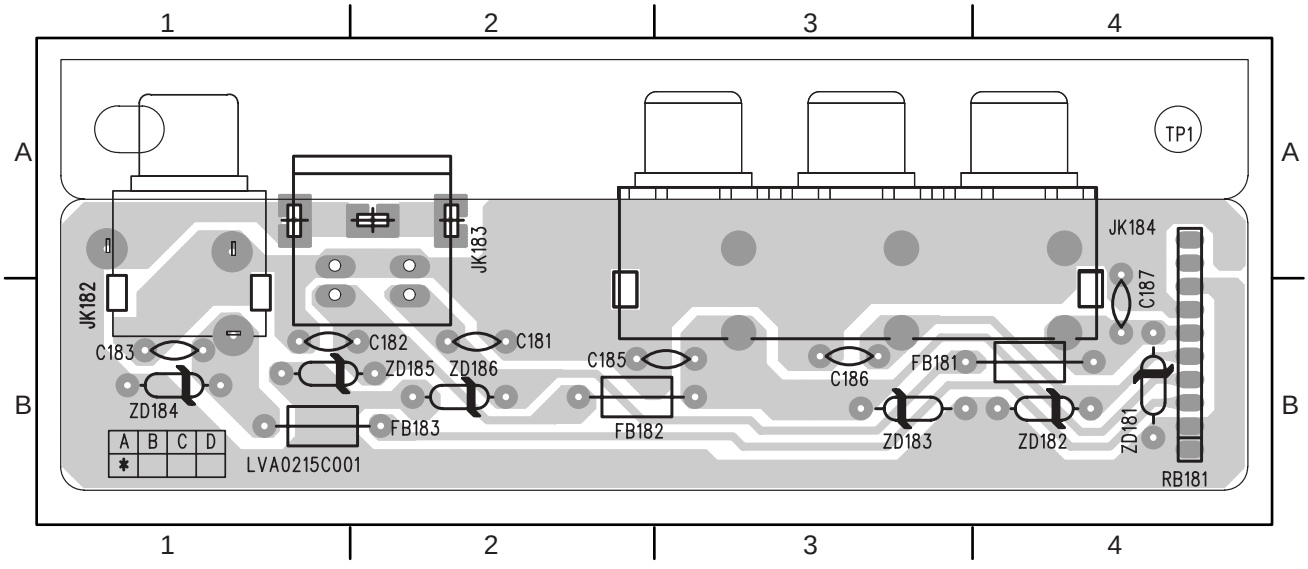
CIRCUIT DIAGRAM - RGB BOARD (For /37, /37S only)

C187	A3	C183	B3	FB181	A2	JK182	B4	RB181	A1	ZD183	A4	ZD186	B2
C181	B3	C185	A3	FB182	B2	JK183	B4	ZD181	A3	ZD184	B2		
C182	B3	C186	A3	FB183	B2	JK184	A4	ZD182	A4	ZD185	B3		



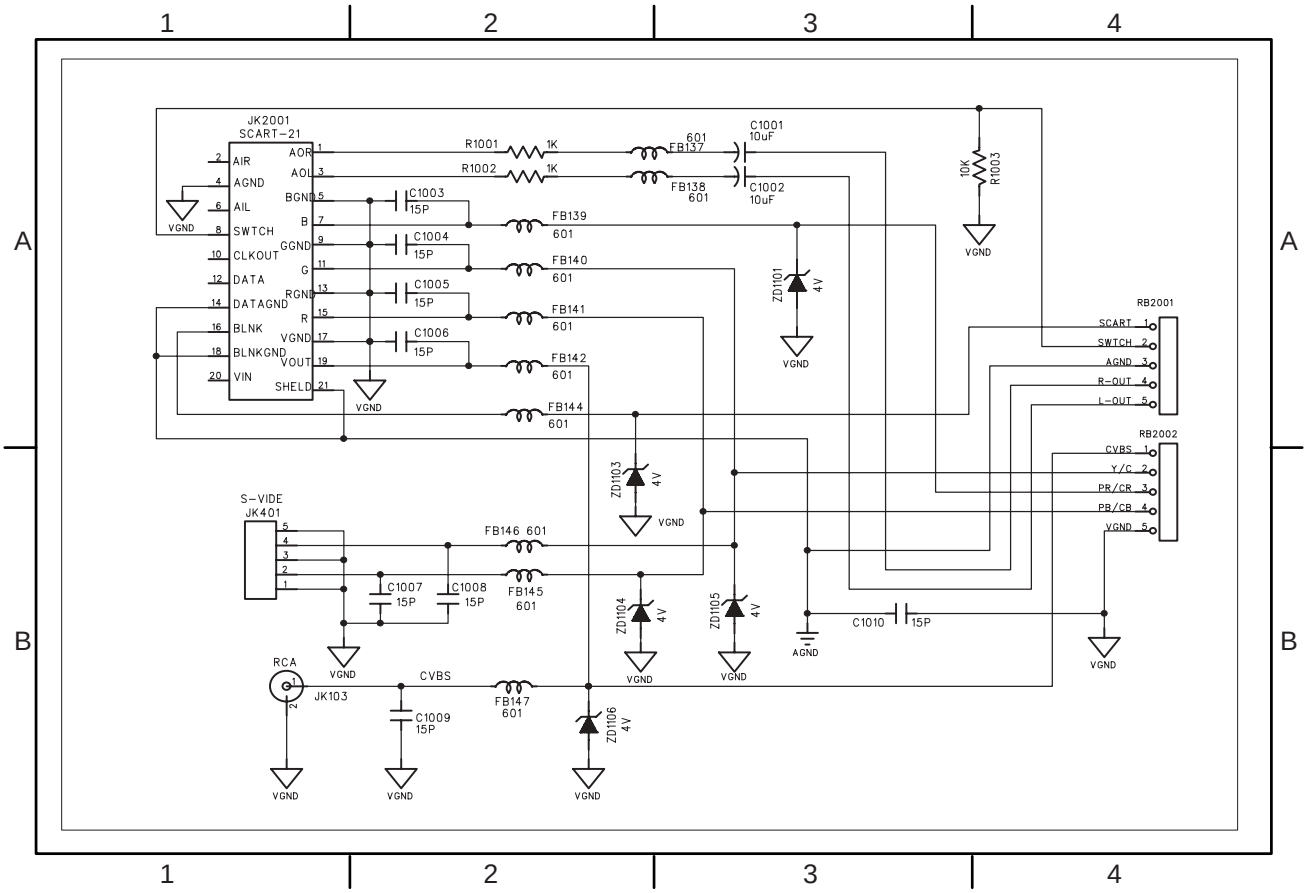
PCB LAYOUT - RGB BOARD (For /37, /37S only)

C187	A3	C183	B3	FB181	A2	JK182	B4	RB181	A1	ZD183	A4	ZD186	B2
C181	B3	C185	A3	FB182	B2	JK183	B4	ZD181	A3	ZD184	B2		
C182	B3	C186	A3	FB183	B2	JK184	A4	ZD182	A4	ZD185	B3		



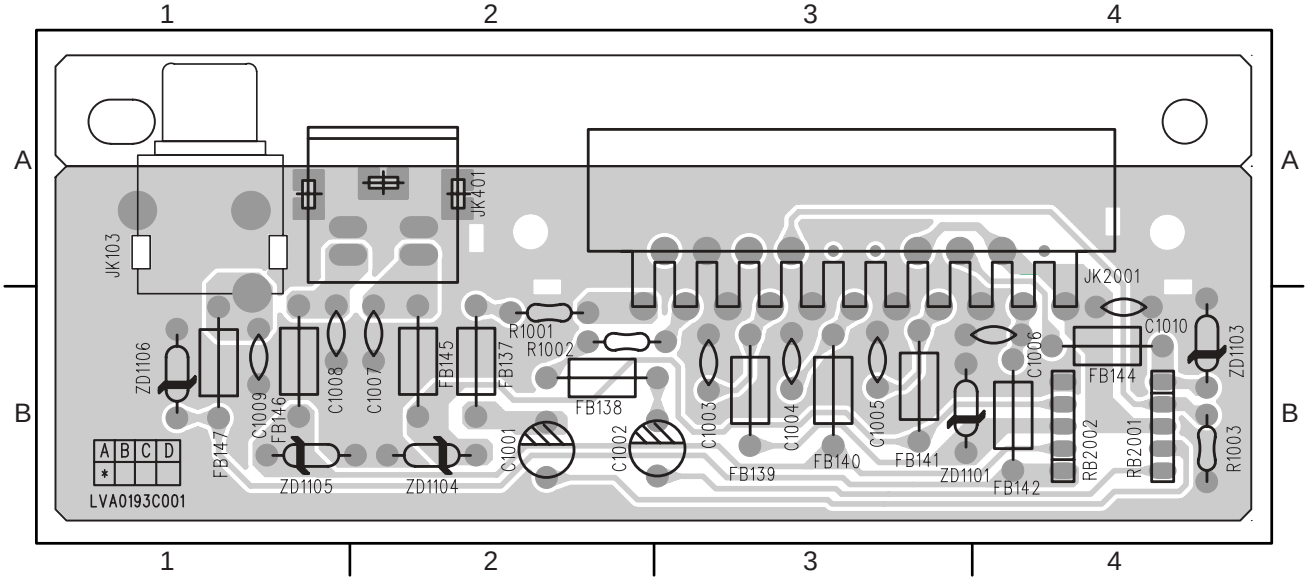
CIRCUIT DIAGRAM - SCRAT BOARD (For /22S only)

C1001	B2	C1006	B4	FB137	B2	FB142	B4	JK103	A1	R1003	B4	ZD1104	B2
C1002	B2	C1007	B2	FB138	B2	FB144	B4	JK401	A2	RB2001	B4	ZD1105	B1
C1003	B3	C1008	B1	FB139	B3	FB145	B2	JK2001	A4	RB2002	B4	ZD1106	B1
C1004	B3	C1009	B1	FB140	B3	FB146	B1	R1001	B2	ZD1101	B3		
C1005	B3	C1010	B4	FB141	B3	FB147	B1	R1002	B2	ZD1103	B4		



PCB LAYOUT - SCART BOARD (For /22S only)

C1001	B2	C1006	B4	FB137	B2	FB142	B4	JK103	A1	R1003	B4	ZD1104	B2
C1002	B2	C1007	B2	FB138	B2	FB144	B4	JK401	A2	RB2001	B4	ZD1105	B1
C1003	B3	C1008	B1	FB139	B3	FB145	B2	JK2001	A4	RB2002	B4	ZD1106	B1
C1004	B3	C1009	B1	FB140	B3	FB146	B1	R1001	B2	ZD1101	B3		
C1005	B3	C1010	B4	FB141	B3	FB147	B1	R1002	B2	ZD1103	B4		



ELECTRICAL PARTS LIST - RGB BOARD (FOR /37 & /37S VERSIONS ONLY)

MISCELLANEOUS

JK182	9965 000 14211	VIDEO OUTPUT YEL
JK183	9965 000 12607	DIN JACK, S-VIDEO OUT
JK184	9965 000 12609	RCA JACK R/G/B

CAPACITORS

C181	9965 000 12590	15pF 50V 5%
C182	9965 000 12590	15pF 50V 5%
C183	9965 000 12590	15pF 50V 5%
C185	9965 000 12590	15pF 50V 5%
C186	9965 000 12590	15pF 50V 5%
C187	9965 000 12590	15pF 50V 5%

COILS & FILTERS

FB181	9965 000 12470	FE BEAD D3,5 x 6MM
FB182	9965 000 12470	FE BEAD D3,5 x 6MM
FB183	9965 000 12470	FE BEAD D3,5 x 6MM

DIODES

ZD181	4822 130 31554	BZX79-B4V3
ZD182	4822 130 31554	BZX79-B4V3
ZD183	4822 130 31554	BZX79-B4V3
ZD184	4822 130 31554	BZX79-B4V3
ZD185	4822 130 31554	BZX79-B4V3
ZD186	4822 130 31554	BZX79-B4V3

Note: Only the parts mentioned in this list are normal service spare parts.

ELECTRICAL PARTS LIST - SCART BOARD (FOR /22S VERSION ONLY)

MISCELLANEOUS

JK101	9965 000 12611	SCART SOCKET
JK103	9965 000 14211	VIDEO OUTPUT YEL
JK401	9965 000 12607	DIN JACK, S-VIDEO OUT

CAPACITORS

C1001	4822 124 40248	10uF20% 63V
C1002	4822 124 40248	10uF20% 63V
C1003	9965 000 12590	15pF 50V 5%
C1004	9965 000 12590	15pF 50V 5%
C1005	9965 000 12590	15pF 50V 5%
C1006	9965 000 12590	15pF 50V 5%
C1007	9965 000 12590	15pF 50V 5%
C1008	9965 000 12590	15pF 50V 5%
C1009	9965 000 12590	15pF 50V 5%
C1010	9965 000 12590	15pF 50V 5%
C1011	9965 000 12590	15pF 50V 5%

RESISTORS

R1001	9965 000 12519	1K OHM 1/6W 5% CF
R1002	9965 000 12519	1K OHM 1/6W 5% CF
R1003	4822 050 21003	10K00 1% 0,6W

COILS & FILTERS

FB137	9965 000 12470	BEAD FERITE 100R/ AT 100MHZ
FB138	9965 000 12470	BEAD FERITE 100R/ AT 100MHZ
FB139	9965 000 12470	BEAD FERITE 100R/ AT 100MHZ
FB140	9965 000 12470	BEAD FERITE 100R/ AT 100MHZ
FB141	9965 000 12470	BEAD FERITE 100R/ AT 100MHZ
FB142	9965 000 12470	BEAD FERITE 100R/ AT 100MHZ
FB144	9965 000 12470	BEAD FERITE 100R/ AT 100MHZ
FB145	9965 000 12470	BEAD FERITE 100R/ AT 100MHZ
FB146	9965 000 12470	BEAD FERITE 100R/ AT 100MHZ
FB147	9965 000 12470	BEAD FERITE 100R/ AT 100MHZ

DIODES

ZD1101	9965 000 12554	ZENER 3.8-4.0V 0.5W
ZD1102	9965 000 12554	ZENER 3.8-4.0V 0.5W
ZD1103	9965 000 12554	ZENER 3.8-4.0V 0.5W
ZD1104	9965 000 12554	ZENER 3.8-4.0V 0.5W
ZD1105	9965 000 12554	ZENER 3.8-4.0V 0.5W
ZD1106	9965 000 12554	ZENER 3.8-4.0V 0.5W

Note: Only the parts mentioned in this list are normal service spare parts.

POWER BOARD

TABLE OF CONTENTS

Internal IC Diagram.....10-1
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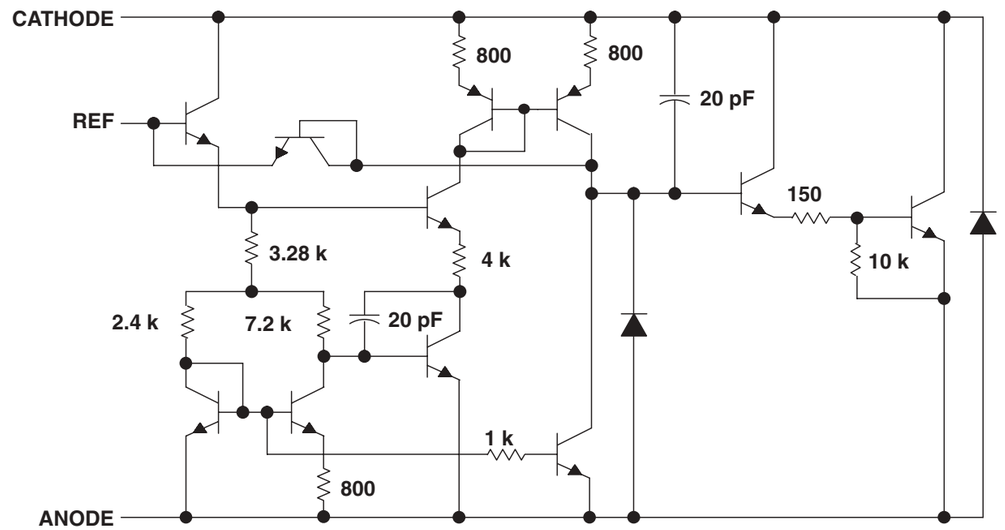
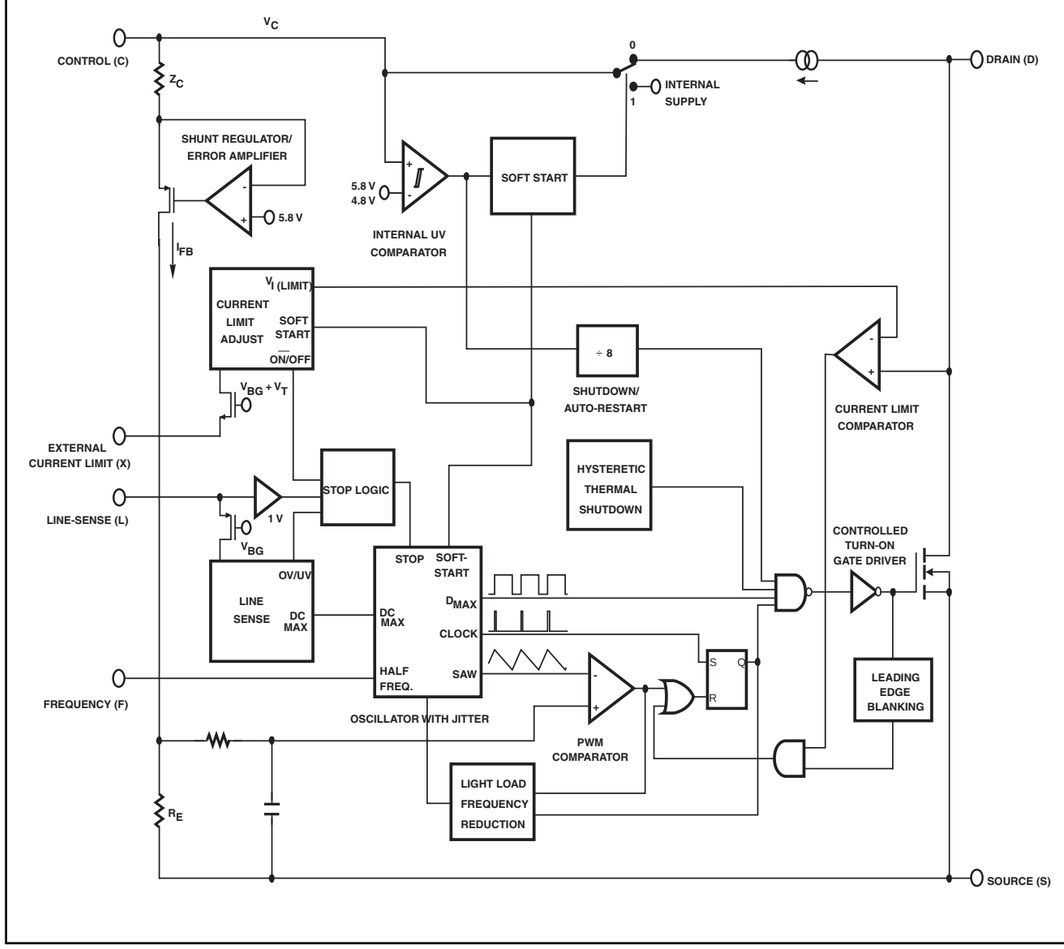
10-1

TL431 EQUIVALENT SCHEMATIC

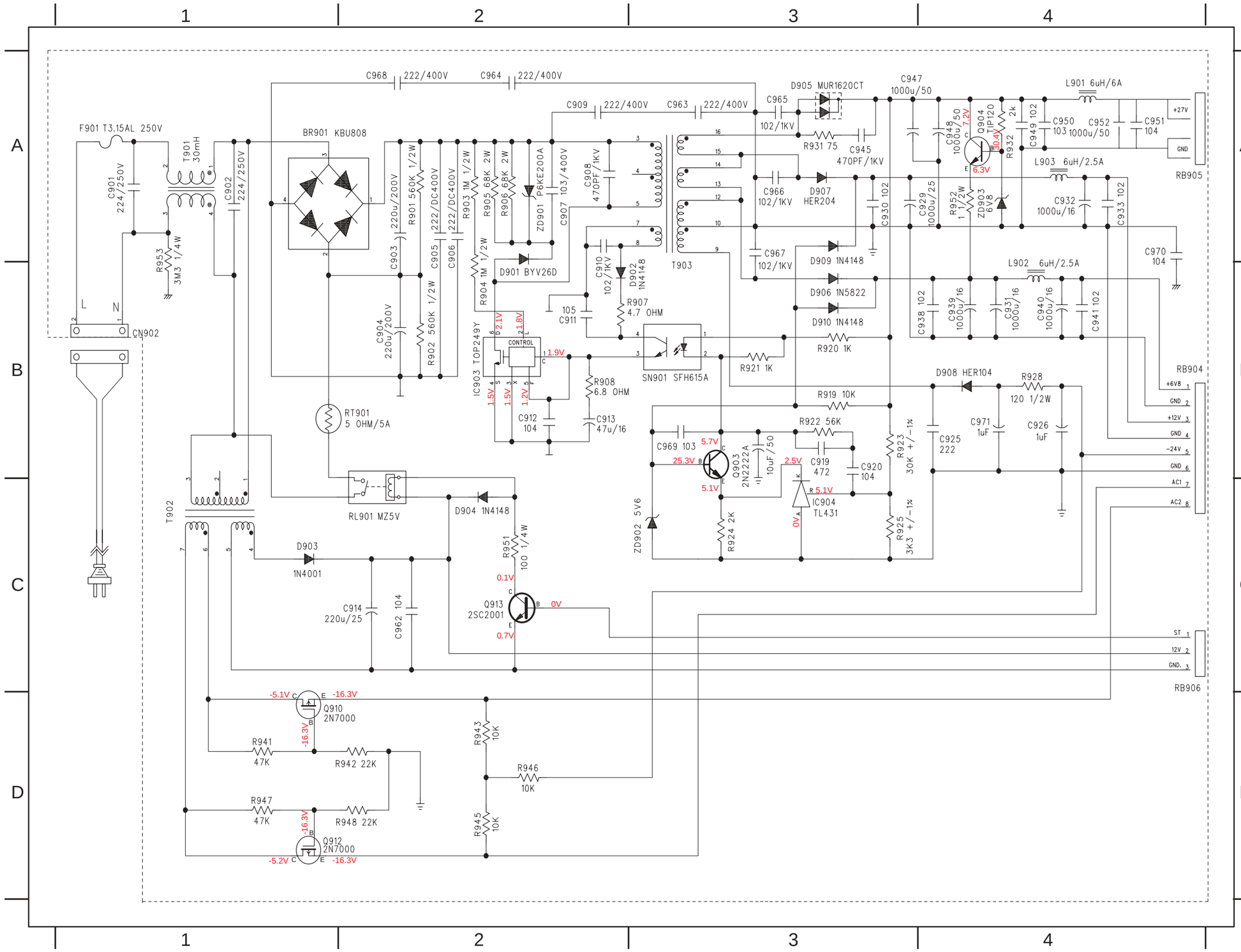


TOP249 BLOCK DIAGRAM



10-2

CIRCUIT DIAGRAM

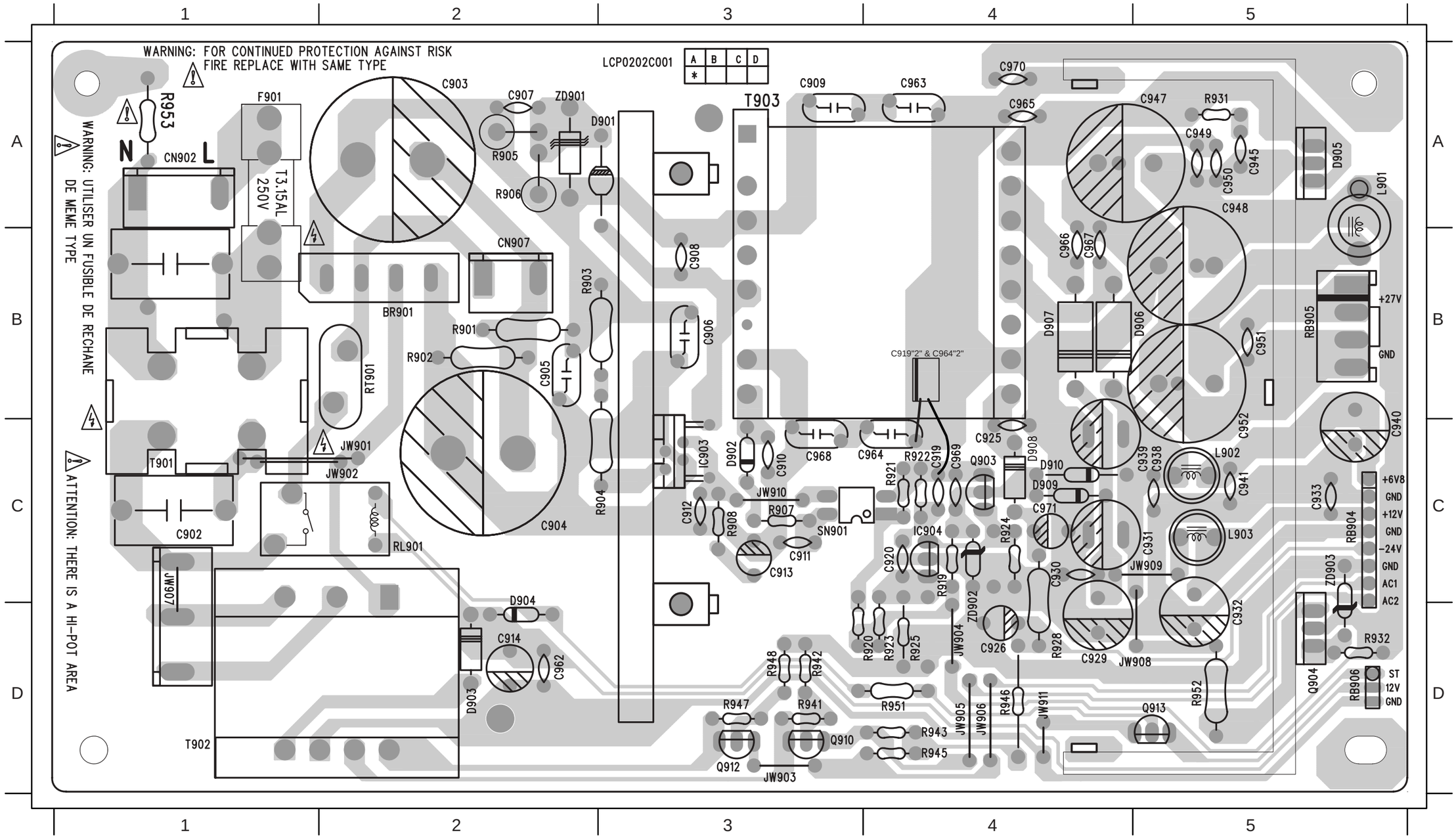


BR901	A1	F901	A1
C901	A1	IC903	B2
C902	A1	IC904	C3
C903	A2	L901	A4
C904	B2	L902	A4
C905	A2	L903	A4
C906	A2	Q903	B3
C907	A2	Q904	A4
C908	A2	Q910	D1
C909	A2	Q912	D1
C910	B2	Q913	C2
C911	B2	R901	A2
C912	B2	R902	B2
C913	B2	R903	A2
C914	C2	R904	B2
C919	B3	R905	A2
C920	B3	R906	A2
C925	B4	R907	B3
C926	B4	R908	B2
C929	A4	R919	B3
C930	A3	R920	B3
C931	B4	R921	B3
C932	A4	R922	B3
C933	A4	R923	B3
C938	B4	R924	C3
C939	B4	R925	C3
C940	B4	R928	B4
C941	B4	R931	A3
C945	A3	R932	A4
C947	A3	R941	D1
C948	A4	R942	D2
C949	A4	R943	D2
C950	A4	R945	D2
C951	A4	R946	D2
C952	A4	R947	D1
C962	C2	R948	D2
C963	A3	R951	C2
C964	A2	R952	A4
C965	A3	R953	A1
C966	A3	RB904	B4
C967	A3	RB905	A4
C968	A2	RB906	C4
C969	B3	RT901	B2
C970	A4	RL901	C2
C971	B4	SN901	B3
CN902	B1	T901	A1
D901	B2	T902	C1
D902	B3	T903	B3
D903	C1	ZD901	A2
D904	C2	ZD902	C3
D905	A3	ZD903	A4
D906	B3		
D907	A3		
D908	B4		
D909	A3		
D910	B3		

10-3

POWER PCB LAYOUT

BR901	B2	C910	C3	C930	C4	C948	A5	C967	B4	D903	D2	IC903	C3	JW909	C5	Q913	D5	R920	D4	R942	D3	RB905	B5	ZD903	C5
C901	B1	C911	C3	C931	C5	C949	A5	C968	C3	D904	D2	IC904	C4	JW910	C3	R901	B2	R921	C4	R943	D4	RB906	D5		
C902	C1	C912	C3	C932	D5	C950	A5	C969	C4	D905	A5	JW901	C2	JW911	D4	R902	B2	R922	C4	R945	D4	RT901	B2		
C903	A2	C913	C3	C933	C5	C951	B5	C970	A4	D906	B4	JW902	C2	L901	A5	R903	B2	R923	D4	R946	D4	RL901	C2		
C904	C2	C914	D2	C938	C5	C952	B5	C971	C4	D907	B4	JW903	D3	L902	C5	R904	C3	R924	C4	R947	D3	SN901	C3		
C905	B2	C919	C4	C939	C5	C962	D2	C919"2" & C964"2"	B4	D908	C4	JW904	D4	L903	C5	R905	A2	R925	D4	R948	D3	T901	C1		
C906	B3	C920	C4	C940	C5	C963	A4	CN902	A1	D909	C4	JW905	D4	Q903	C4	R906	A2	R928	D4	RB904	C5	T902	D1		
C907	A2	C925	C4	C941	C5	C964	C4	CN907	B2	D910	C4	JW906	D4	Q904	D5	R907	C3	R931	A5			T903	A3		
C908	B3	C926	D4	C945	A5	C965	A4	D901	A3	F901	A1	JW907	C1	Q910	D3	R908	C3	R932	D5			ZD901	A2		
C909	A3	C929	D4	C947	A5	C966	B4	D902	C3			JW908	D5	Q912	D3	R919	C4	R941	D3			ZD902	D4		



10-4

ELECTRICAL PARTS LIST - POWER BOARD

ELECTRICAL PARTS LIST - POWER BOARD

MISCELLANEOUS

CN902	9965 000 12636	⚠	CONNECTOR 4 PIN P=3,96MM
F901	9965 000 12500	⚠	FUSE T3,15A 250V SLOW
RB905	9965 000 14203	⚠	WIRE W/PLUG 4P 120MM
RL901	9965 000 09708	⚠	RELAY GJ-SH-112DM 320R
RT901	9965 000 14204	⚠	NTC THERMISTER 5OHM 5A D13MM
SN901	9965 000 14205	⚠	SFH615A-3

CAPACITORS

C901	9965 000 16687	⚠	0,22uF 275V 20%
C902	9965 000 16687	⚠	0,22uF 275V 20%
C903	9965 000 14178	⚠	220uF 250V 20%
C904	9965 000 14178	⚠	220uF 250V 20%
C905	9965 000 14179	⚠	0,0022uF 400V 20%
C906	9965 000 14179	⚠	0,0022uF 400V 20%
C907	9965 000 14180		0,01uF 1KV 20%
C908	9965 000 14181		470pF 1KV 10%
C909	9965 000 14179	⚠	0,0022uF 400V 20%
C910	9965 000 14182		0,001uF 1KV 20%
C911	4822 124 40756		1uF 100V 20%
C912	9965 000 12529		0,1uF 50V +80-20%
C913	4822 124 40433		47uF 20% 25V
C914	9965 000 12533		220uF 25V 20%
C919	9965 000 12528		4700pF 50V 10%
C919"2"	9965 000 14184		10uF 50V 20% (BACK SOLDER)
C920	9965 000 12529		0,1uF 50V +80-20%
C925	9965 000 14182		0,001uF 1KV 20%
C926	4822 124 21913		1uF 20% 63V
C929	9965 000 12530		1000uF 25V 20% D=10
C930	5322 122 32331		1nF 10% 100V
C931	9965 000 14143		1000uF 16V 20% 85'C
C932	9965 000 14143		1000uF 16V 20% 85'C
C933	5322 122 32331		1nF 10% 100V
C938	5322 122 32331		1nF 10% 100V
C939	9965 000 14143		1000uF 16V 20% 85'C
C940	9965 000 14143		1000uF 16V 20% 85'C
C941	5322 122 32331		1nF 10% 100V
C945	9965 000 14181		470pF 1KV 10%
C947	9965 000 14140		1000uF 50V 20%
C948	9965 000 14140		1000uF 50V 20%
C949	5322 122 32331		1nF 10% 100V
C950	9965 000 14185		0,01uF 50V 10%
C951	9965 000 12529		0,1uF 50V +80-20%
C952	9965 000 14140		1000uF 50V 20%
C962	9965 000 12529		0,1uF 50V +80-20%
C963	9965 000 14179	⚠	0,0022uF 400V 20%
C964	9965 000 14179	⚠	0,0022uF 400V 20%
C964"2"	9965 000 14184		10uF 50V 20% (BACK SOLDER)
C965	9965 000 14182		0,001uF 1KV 20%
C966	9965 000 14182		0,001uF 1KV 20%
C967	9965 000 14182		0,001uF 1KV 20%
C968	9965 000 14179	⚠	0,0022uF 400V 20%
C969	9965 000 14185		0,01uF 50V 10%
C970	9965 000 12529		0,1uF 50V +80-20%
C971	4822 124 21913		1uF 20% 63V
C972	9965 000 16356		10uF 50V 20%

RESISTORS

R901	9965 000 14192		560K 1/2W 5%
R902	9965 000 14192		560K 1/2W 5%
R903	9965 000 14193		1M 1/2W 5% CF
R904	9965 000 14193		1M 1/2W 5% CF
R905	9965 000 14194		68K 2W 5%
R906	9965 000 14194		68K 2W 5%
R907	9965 000 16690		4,7R 1/4W 5%
R908	9965 000 14196		6,8R 1/6W 5%
R919	4822 050 21003		10K 1% 0,6W
R920	9965 000 12519		1K 1/6W 5% CF
R921	9965 000 12519		1K 1/6W 5% CF
R922	9965 000 09727		56K 1/6W 5% CF
R923	9965 000 14197		30K 1/6W 1% MF
R924	9965 000 12621		2K 1/6W 5%
R925	9965 000 14198		2,7K 1/6W 1% MF
R928	9965 000 16691		120R 1/2W 5%
R931	9965 000 14200		75R 1/6W 5% CF
R932	9965 000 12621		2K 1/6W 5%
R941	4822 050 24703		47K 1% 0,6W
R942	4822 050 22203		22K 1% 0,6W
R943	4822 050 21003		10K 1% 0,6W
R945	4822 050 21003		10K 1% 0,6W
R946	4822 050 21003		10K 1% 0,6W
R947	4822 050 24703		47K 1% 0,6W
R948	4822 050 22203		22K 1% 0,6W
R951	9965 000 14201		100R 1/4W 5% CF
R952	9965 000 12517		1R 1/2W 5%
R953	9965 000 16681		3,3M 1/2W 5% only /37/37S

COILS & FILTERS

L901	9965 000 16693		COIL 6uH 10,5TS 6A
L902	9965 000 16694		COIL 6uH 13,5TS 2UEW
L903	9965 000 16694		COIL 6uH 13,5TS 2UEW
T901	9965 000 14206	⚠	M/FILTER 1,7A L1:86TS L2:86TS
T902	9965 000 14207	⚠	STANDBY TRANSFO 120V /37/37S
T902	9965 000 14230	⚠	STANDBY TRANSFO 230V /22S
T903	9965 000 14208	⚠	POWER TRANSFROMER EE-42 50W

DIODES

BR901	9965 000 14176	⚠	KBU808 8A 800V SEP
D901	4822 130 11044	⚠	BYV26D
D902	4822 130 30621		1N4148
D903	4822 130 31438	⚠	1N4001G
D904	4822 130 30621		1N4148
D905	9965 000 14186	⚠	MUR1620CT 8A 200V
D906	5322 130 32677	⚠	1N5822
D907	9965 000 14187	⚠	HER204 2A/300V 50NS
D908	9965 000 14188	⚠	HER104 1A/300V 50NS
D909	4822 130 30621		1N4148
D910	4822 130 30621		1N4148
ZD901	9965 000 14209	⚠	P6KE200A
ZD902	9965 000 14210		ZENER 5,6-5,9V 0,5W
ZD903	4822 130 80272		MTZJ7,5C

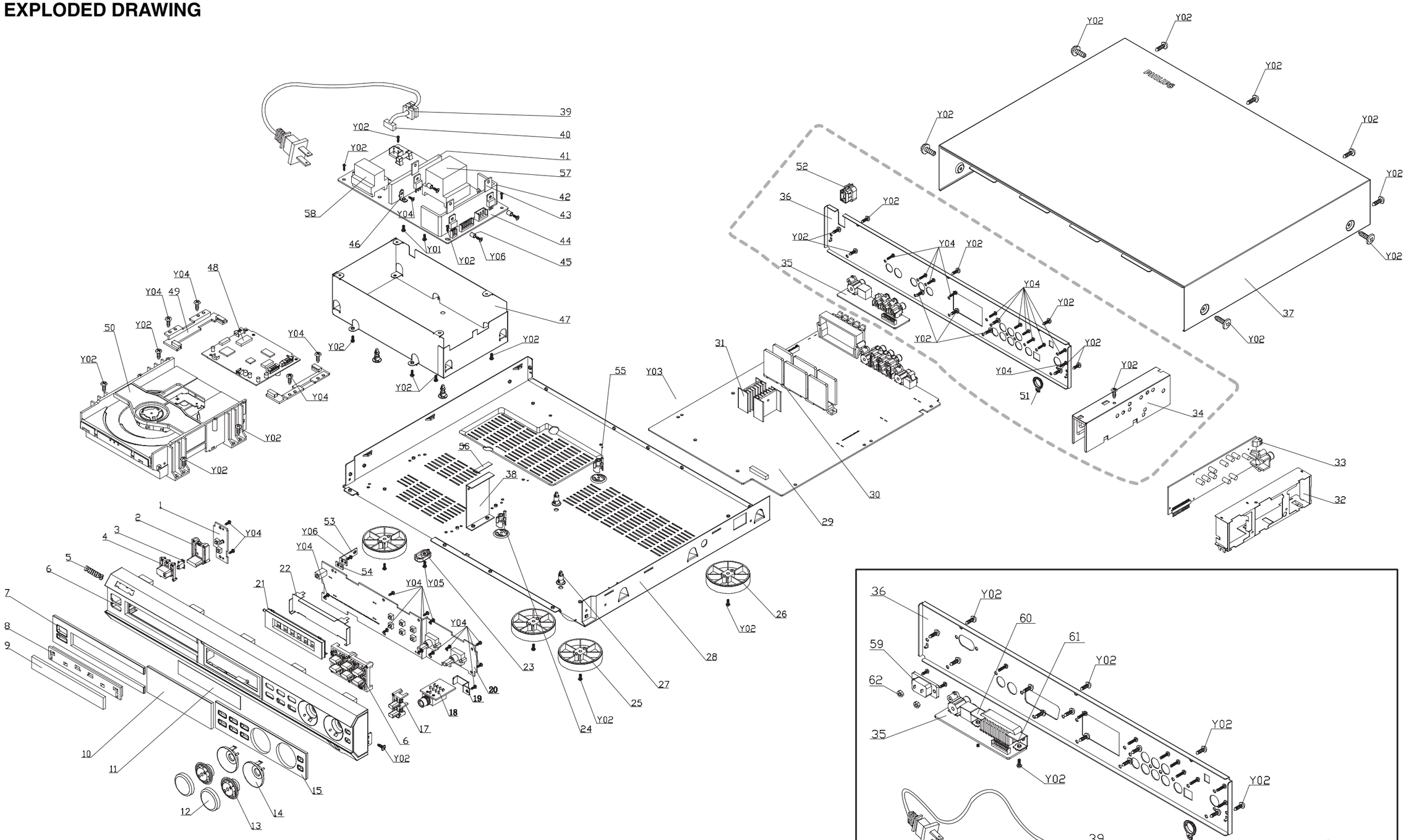
TRANSISTORS & INTEGRATED CIRCUITS

IC903	9965 000 14189	⚠	TOP249 250W
IC904	4822 209 81397	⚠	TL431CLPST
Q903	5322 130 44115		2N2222A
Q904	5322 130 60082	⚠	TIP120
Q910	9965 000 02409		2N7000
Q912	9965 000 02409		2N7000
Q913	4822 130 41651		2SC2001L

Note: Only the parts mentioned in this list are normal service spare parts.

11-1

EXPLODED DRAWING



FOR MX3800 ONLY

MECHANICAL & ACCESSORIES PARTS LIST - MAIN UINT

2	9965 000 14096	OPEN / CLOSE KNOB	
3	9965 000 14097	LED LENS	
4	9965 000 14098	POWER KNOB	
5	9965 000 12424	PHILIPS LOGO	
6	9965 000 15477	FRONT PANEL	MX3550D/37S
6	9965 000 14099	FRONT PANEL	MX3600D/37
6	9965 000 14291	FRONT PANEL	MX3700D/37S
6	9965 000 14216	FRONT PANEL	MX3800D/21H/22S
7	9965 000 14217	POWER LENS	/21H/22S
7	9965 000 14100	POWER KNOB TRIM	/37
7	9965 000 14292	POWER LENS	/37S
8	9965 000 14101	DVD DOOR	
9	9965 000 14218	DOOR LENS	/21H/22S
9	9965 000 14102	DOOR LENS	/37/37S
10	9965 000 14219	VFD LENS	/21H/22S
10	9965 000 14103	VFD LENS	/37/37S
12	9965 000 14104	VOLUME CAB	
13	9965 000 14105	VOLUME SHAFT	
14	9965 000 14221	VOLUME RING	
15	9965 000 14222	FUNCTION LENS	/21H/22S
15	9965 000 14107	FUNCTION KNOB TRIM	/37
15	9965 000 14293	FUNCTION LENS	/37S
16	9965 000 14108	FUNCTION KNOB	
17	9965 000 14109	BASS KNOB	
24	9965 000 12437	PCB BRACKET	
25	9965 000 14110	FOOT, SILVER	
26	9965 000 14111	FOOT, BLACK	
27	9965 000 12445	SPACER	
39	9965 000 14112	BUSHING FIXED AC CORD	
40	9965 000 15983 ⚠	MAINS CORD	/21H/22S
40	9965 000 12818 ⚠	MAINS CORD	/37/37S
48	9965 000 13082	DVD FE SERVO PCB ASSY KIT572SE	
48	9965 000 16291	DVD FE SERVO PCB ASSY KIT772SI	
50	9965 000 12822	DVD LOADER MODULE KIT572SE	
50	9965 000 15489	DVD LOADER MODULE KIT772SI	
51	9965 000 12441	HOLDER	
52	9965 000 12817	BUSHING	/37/37S
55	9965 000 12455	PCB BRACKET	
59	9965 000 12443 ⚠	MAINS SOCKET	/21H/22S
	9965 000 14633	AM LOOP ANTENNA	/21H
	9965 000 14114	AM LOOP ANTENNA	/22S/37/37S
	9965 000 14115	FLEX CABLE 16PINS (CN201 TO DVD)	
	9965 000 14116	FLEX CABLE 26PINS (CN103 TO DVD)	
	9965 000 14117	FM ANTENNA	
	9965 000 16310	INSTRUCTION FOR USE	MX3800D/21H
	9965 000 14223	INSTRUCTION FOR USE	MX3800D/22S
	9965 000 14118	INSTRUCTION FOR USE	MX3600D/37& MX3700D/37S
	9965 000 15478	INSTRUCTION FOR USE	MX3550D/37S
	9965 000 13060	REMOTE CONTROL	
	9965 000 13092	RGB CABLE 3P 1,5M	except /22S
	9965 000 13059	SCART CABLE 1M	/22S
	9965 000 14215	SATELLITE SPEAKER PACKAGE FOR MX3800D/21H/22S	
	9965 000 14095	SATELLITE SPEAKER PACKAGE FOR MX355D/37S & MX3600D/37	
	9965 000 14290	SATELLITE SPEAKER PACKAGE FOR MX3700D/37S	
	9965 000 13057	RCA CABLE 1P 5M, SUBWOOFER	
	9965 000 14119	RCA CABLE 1P 1,2M VIDEO OUT	
	9965 000 14653	S-VIDEO CABLE	

LOUDSPEAKER BOX BREAKDOWN

9965 000 14224	FRONT SPEAKER BOX	/21H/22S
9965 000 14120	FRONT SPEAKER BOX	/37/37S
9965 000 14225	SURROUND SPEAKER BOX	/21H/22S
9965 000 14121	SURROUND SPEAKER BOX	/37/37S
9965 000 14226	CENTER SPEAKER BOX	/21H/22S
9965 000 14122	CENTER SPEAKER BOX	/37/37S
9965 000 11846	GRILLE ASSY, FR/REAR SPK	/37/37S
9965 000 11848	GRILLE ASSY, CENTER SPK	/37/37S
9965 000 14123	MOUNTING BRACKET	

Note: Only the parts mentioned in this list are normal service spare parts.

11-2

SCREW LIST - MAIN UINT

Y01	M3 x 6
Y02	D3 x 6
Y03	D3 x 16
Y04	D3 x 8
Y05	D3 x 8
Y06	D3 x 10

DOCUMENT HISTORY

Version 1.0

* Initial release

Version 1.1

* New type/version MX3550D/37S has been added
  Page 1-2 : Variation table adapted
  Page 11-2 : Mechanical parts list adapted
* Correction / adaptation of Service Manual pages
  Page 2-1 : Correction of type/version & add MX3550D/37S

Version 1.2

* The following pages are adapted to include new type/version MX3800D/21H:
  Page 1-2, 1-3, 2-1, 5-5, 6-6, 8-10 to 8-12, 10-4 and 11-2
* Correction / adaptation of Service Manual pages
  Page 7-2 to 7-6 : Improved circuit and layout diagrams (better readablity)
  Page 7-7 : Correction of exploded view (pos3)
  Page 7-8 : Addition of service parts
  Chapter 7A : Add DVD Module KIT771S (including additional service parts)
  Page 11-2 : correction for pos 14, 40 and add S-video cable

Version 1.3

* Correction / adaptaion of Service Manual pages
  Page 2-1 : Change item 6 to "Check Software version"
  Page 8-12 : Correction of part code for item IC100